THE ANALYSIS AND EVALUATION OF THE EFFECTS OF THE PRACTICAL APPLICATION OF NATIONAL LEGISLATION RELATED TO SAFETY AND HEALTH AT WORK IN MINERAL EXTRACTION THROUGH DRILLING DIRECTIVE 92/91/EEC.

This study analyses how Directive 92/91/EEC has been transposed and implemented by the EU Member States and EEA countries, and evaluate how effective the national legislation is at protecting the safety and health of workers. The outcome will be used to inform the EU on any changes that may be required to the directive, or to provide justification if no such changes are needed.

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EXECUTIVE SUMMARY

FOR

THE ANALYSIS AND EVALUATION OF THE EFFECTS OF THE PRACTICAL APPLICATION OF NATIONAL LEGISLATION RELATED TO SAFETY AND HEALTH AT WORK IN MINERAL EXTRACTION THROUGH DRILLING

EUROPEAN COMMISSION
DG Employment, Social Affairs and Inclusion

Employment and Social Legislation, Social Dialogue
Health, Safety and Hygiene at Work

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The Analysis and Evaluation of the Effects of the Practical Application of National Legislation Related to Safety and Health at Work in Mineral Extraction Through Drilling

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Summary:
The European Commission wishes to analyse how Directive 92/91/EEC has been transposed and implemented by the European Union Member States and European Economic Area countries, and evaluate how effective the national legislation is at protecting the safety and health of workers. The outcome will be used to inform the European Union on any changes that may be required to the directive, or to provide justification if no such changes are needed. This document is the report on the review of Directive 92/91/EEC completed for the European Commission by DNV.

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1 EXECUTIVE SUMMARY

1.1 Background

The European Union (EU) seeks to a) protect the safety and health of workers and b) secure improvements in the working conditions of workers across all its member states. It does so by enacting directives that govern all activities relating to health and safety at work (and thus protection of workers). The authority to enact directives in this field stems from article 153 of the Treaty on the Functioning of the European Union.

The EU has enacted a wide range of directives that set out minimum health and safety requirements for the protection of workers. Directive 89/391/EEC is the principal directive in this field. It is the EU’s health and safety at work “framework directive” and its aim is to introduce measures to encourage improvements in the safety and health of workers at work. It applies to all sectors of activity, both public and private, (excluding some specific public service activities, e.g. the armed forces and the police). It lays down general principles concerning the prevention and protection of workers from various sources of risk.

Under Directive 89/391/EEC there are a series of individual directives. The individual directives contain more detailed provisions for specific areas aspects of health and safety at work. Directive 89/391/EEC with its general principles continues to apply in full to all the areas covered by the individual directives (i.e. despite the fact that the latter individual directives are subordinate to the framework directive, they both apply in equal measure and should always be read in tandem).

Directive 92/91/EEC, adopted in 1992, concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling, is one of the individual directives under Directive 89/391/EEC.

The European Commission (EC) wishes to analyse how Directive 92/91/EEC has been transposed and implemented by the EU Member States and EEA countries, and evaluate how effective the national legislation is at protecting the safety and health of workers. The outcome will be used to inform the EU on any changes that may be required to the directive, or to provide justification if no such changes are needed.

The following are the drivers for the review:

- The accession of additional member states to the EU since the last review.
- Oil and gas drilling and production activities in:
  - Areas where exploration and/or production activities are taking place for the first time (e.g. oil and gas exploration in the waters of Cyprus).
  - More challenging and complex environments (e.g. West of Shetland and the Arctic).
- Increased awareness of the risks associated with oil and gas exploration following the Deepwater Horizon accident.
- The proposed legislation from the EC that covering major accidents in offshore oil and gas prospection, exploration and production activities.

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1.2 Objectives
The main objectives for the review are as follows:

1. To analyse and evaluate the practical application of national legislation related to safety and health at work in mineral extraction through drilling.

2. To compare the various ways in which Directive 92/91/EEC has been transposed and implemented by the Member States.

3. To examine the impact the Directive 92/91/EEC has had in Member States.

4. To review the provisions of Directive 92/91/EEC following the Deepwater Horizon accident, and indicate if changes are required (or justify requiring no changes).

5. To consider what changes are needed to Directive 92/91/EEC to ensure continuity with the proposed European legislation on safety in the offshore oil and gas industry (EC, 2011).

6. To analyse if other options could be used to increase the effectiveness of Directive 92/91/EEC.

7. To support the preparation of the Analytical Document for the Social Partner consultation that will be needed if changes to the Directive are envisaged (if necessary).

1.3 Scope of the Review
The scope covers safety and health at work in the mineral extraction through drilling industries in EU member states and EEA countries.

The specification requires the review to identify, analyse, and assess:

a. The specific prevention approaches adopted by member states and by undertakings and public sector bodies, e.g. organisational measures.

b. The balance of regulatory attention given to major hazard control measures compared to conventional occupational health and safety systems.

c. The impact of these specific prevention approaches on all levels of safety and health protection at work.

d. The difficulties and the positive effects encountered by undertakings and public sector bodies in connection with the practical application of legislation on safety and health at work.

e. Any unexpected negative or positive side effects resulting from the practical application of legislation on safety and health at work.

In all cases effects on small and medium-sized enterprises (SMEs) and self-employed workers are to be considered. In addition it was required that the analyses must highlight the main differences among the 27 Member States and examine the potential consequences on the safety of offshore operations across Europe.
1.4 Approach
In order to structure the work and promote a systematic approach, the activities started by expanding the objectives into a list of questions to answer organised around a number of high level themes namely:

- Background / contextual information (current / future level of activity, historical trends etc.).
- The regulatory approaches adopted across EU and EEA countries.
- The scope of the national legislation.
- Requirements, practices and enforcement.
- Effectiveness / evaluation.
- Future considerations.

The study then answered them by using the following methods:

- Gap analysis of the directive against the findings from selected major accidents.
- Semi-structured interviews with stakeholders in selected countries.
- Survey of a wide group of stakeholders in all relevant countries.
- Analysis of industry activity and its safety performance from published data, information gained from the interviews and survey to produce a simple overview of the mineral extraction through drilling in EU and EEA countries.
- Triangulation of the findings from the above activities.

1.5 Discussion and Recommendations
A wide range of insights relating to directive were identified as part of this work. This covered aspects such as:

- Whether changes to the directive are required.
- What and where such changes should be effected (i.e. within the directive or in documents in support of directive e.g. supporting explanatory text).
- Proposals on how these changes should be made as well the role certain parties/stakeholders can take in the change process.

In order to give a sense of priority / importance to the overall output of this work, the findings, conclusions and recommendations are presented considering the fundamental questions which together lie at the core of this review:

- Question 1 - Are changes needed to the directive? (Answered in Section 1.5.1).
  o Question 2 - If yes, what changes are needed to the directive? (Answered in Section 1.5.2).
- Question 3 - Are other actions needed to increase the directive’s effectiveness? (Answered in Section 1.5.3).
1.5.1 Question 1 - Are changes needed to the directive?

Conclusion from this review: Yes.

Based on the findings of this review, DNV concludes that Directive 92/91/EEC should be updated. It should be noted that this conclusion is largely driven by the needs of the major accident mineral extraction through drilling industry, and more specifically the offshore oil and gas industry. The findings that lead to this conclusion are presented in Table 1.1. Recommendations for specific changes to the directive are made in Section 1.5.2.

### Table 1.1 Primary findings leading to the conclusion that changes to the directive are needed

<table>
<thead>
<tr>
<th>Finding</th>
<th>Discussion</th>
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<tr>
<td>Stakeholders in countries where the directive is of greatest importance in protecting the safety of workers, due to the inherent risk of their mineral extraction through drilling industry, explicitly stated that they would like the directive to be modified, i.e. an update of the directive is seen as supporting improved protection for workers in the major hazard mineral extraction through drilling industries.</td>
<td>Specifically stakeholders in the majority of countries with an offshore oil and gas exploration and production (70%(^2)) hold the view that the directive should be modified. The EC want to ensure that workers in the offshore oil and gas industry are protected. This is evidenced by their request for this review to focus on this industry, and their proposed legislation for this industry. Given that the risks associated with offshore oil and gas drilling (e.g. blowouts, harsh and remote locations, deep-water drilling, potential for significant environmental pollution etc.) are arguably the most significant of any mineral extraction through drilling activity, this position is understandable. DNV note that countries without an oil and gas (high hazard mineral extraction through drilling) industry do not see a need to modify the directive. (see Section 6.1.1.1 of the main report).</td>
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<tr>
<td>Current industry and regulatory good practice has moved on since 1992 and are not fully reflected in the directive.</td>
<td>Current industry and regulatory good practice has moved on from what it was in 1992 (the year the directive was introduced). National legislation in various EU and EEA countries has evolved / been refined since 1992 to accommodate new learning’s based on going experience. This can be evidenced by the legislative changes in in, for example, Denmark and Norway. Similarly the industry has improved its practices. This can be seen through the guidance issued by trade associations and other bodies in response to learning, and statements during interviews with international oil and gas companies, who now view their systems as going beyond the legislative requirements in many countries. It is recognised that the directive’s design, namely its adoption of a goal setting approach and its requirement for advances in technology to be taken into account (by virtue of the framework directive) are designed to ensure that the directive remains applicable as practices and technology change. These features of the directive are also designed to ensure that minimum standards evolve (improve) over time. As the Directive 92/91/EEC has remained unchanged since its introduction over 20 years ago, it can be concluded that its design has been robust, maintaining its applicability over this period. Nevertheless, areas in which improvements can be made to the directive have been identified. The suggested modifications are discussed further under the question “…what changes are needed to the directive?”. (see Section 6.2.1.2 and 6.2.2.2 of the main report).</td>
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</table>
### Finding 1

Various specific areas in the directive itself (as a whole) or with specific provisions were identified (by the review) as being limited. The limitations could impact negatively on its capacity to support the protection of workers.

### Discussion

Whilst the central design elements/features of the directive, namely its goal setting approach, the requirement for a risk assessment and the need to take account of technological advances, ensure it has broad range applicability to cover a broad range of risk types, activities and situations (thus making it quite robust overall), certain areas have been identified by stakeholders as requiring improvement/further elaboration. Instances include:

- The requirements for control of hazards during drilling were seen as being limited.
- The directive is perceived to focus more heavily on occupational health and safety issues and less on major hazard accidents.
- Improved clarity on the scope and areas of application of the directive, especially with regards to:
  - Types of mineral extraction activities covered.
  - The stages over the lifecycle of a mineral extraction it should apply to.
  - The geographical extent/boundaries of the mineral extraction facility within which the directive should apply (e.g. offshore facilities, pipelines and connected facilities).
- Improved clarity of key concepts used in the directive (e.g. the “employer” and how it relates to the network of players involved).
- Closely linked to the above is the need for better clarity on the roles and responsibilities of the parties involved.
- The lack of a specific requirement on the responsible party to have in place a safety management system.

(see Sections 6.2.2.2, 6.1.1.4.1, 6.1.1.5 and 6.1.2.1 of the main report).

### Finding 2

The directive and the proposed legislation need to work together.

### Discussion

Currently the EC has proposed legislation on the safety of offshore oil and gas prospection, exploration and production activities: “Proposal for a Regulation of the European Parliament and of the Council on safety of offshore oil and gas prospection, exploration and production activities” (EC, 2012a). This proposed legislation seeks to address risks associated with “major accidents” in the offshore oil and gas industry to which Directive 92/91/EEC already applies. Several stakeholders raised, during interviews, the need for the directive and the proposed legislation to work together.

Given this, there is a need to ensure clarity between the scope covered by Directive 92/91/EEC and the proposed legislation, and to ensure that they will work together in a harmonious manner without creating unnecessary duplication.

It was also stated that there are many aspects in the proposed legislation which it would be appropriate to include in the directive.

(Also see Section 6.2.2.2 of the main report).

### 1.5.2 Question 2 - What changes are needed to the directive?

If the EC agrees with DNV’s conclusion on the need to update Directive 92/91/EEC, specific recommendations to improve the directive arising out of the review are presented in Table 1.2 and Table 1.3, along with discussion on the findings which lead to them.

The recommendations presented in Table 1.2 are aspects of the directive that DNV would recommend are maintained. The subsequent recommendations in Table 1.3 are aimed at improving the directive (i.e. changes to be made).
Table 1.2 Recommendations on aspects of the directive to be maintained

<table>
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<th>Recommendation</th>
<th>Discussion</th>
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<td><strong>R1. Directive 92/91/EEC should remain a directive</strong> (and not be changed to a regulation or removed).</td>
<td>From the review it is clear that the culture, legal systems and history of the different countries are different and that the directive approach allows the flexibility to implement EU legislation in a manner that fits a country's situation. This was seen as important by many of the stakeholders interviewed. There was no proposal to repeal the directive or to convert it to guidance from any stakeholders during the review. It is noted that the current legal basis only allows the adoption of directives in the field of health and safety at work (see Section 4 of the main report). It is therefore understood that the possibility of converting the directive to an EU regulation is not currently present. (Also see Sections 6.1.1.2 and 6.1.1.4.3 of the main report).</td>
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| **R2. Directive 92/91/EEC should keep its goal oriented approach.** | Based on the views was expressed in interviews by stakeholders from several EU and EEA countries, the goal oriented approach is seen to have several advantages. These included:  
  • Providing flexibility for the industry to protect worker safety in innovative ways (as well as using more traditional methods).  
  • Driving continuous improvement as safety standards and expectations rise.  
  • Being fit for more challenging mineral extraction through environments (for example mineral extraction through drilling in Arctic waters, offshore west of Ireland, deep water, etc.) as well as current environments.  
  • Supporting regulators to ensure that learning (including learning from accidents) is taken on board by the mineral extraction industry in a prompt and efficient manner.  
  
  It is noted that the goal oriented approach can be supported with some prescriptive requirements. This is discussed further under Recommendation R12. (Also see Sections 6.1.1.2 and 6.2.2.2 of the main report). |
| **R3. Directive 92/91/EEC should keep the risk based approach.** | The application of risk assessment and taking a risk based approach was supported by stakeholders from across the EU and EEA countries. Its benefits as expressed by the stakeholders is that it allows the regulators and industry to focus their resources on what is of greatest importance to delivering the safety of workers. This approach is also seen as helping to ensure the national legislation implementing the requirements of Directive 92/91/EEC does not pose an unnecessary burden on any party.  
  
  The risk based approach is important as the range of mineral extraction through drilling activities across the EU and EEA countries vary in their inherent level of risk. For example, offshore oil and gas in more extreme environments and deeper waters inherently pose a greater inherent risk than onshore salt extraction. The risk based approach means that the activities undertaken by the industry to manage the risks and the regulator to ensure they are adequately managed can be adjusted to be proportionate to the level of risk. (Also see Section 6.2.1.3 of the main report). |
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

Table 1.3 Recommendations for changes to the directive

<table>
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<tr>
<td>R4. The directive should be modified to include current good practice from the regulatory regimes in EU and EEA countries, including many of the aspects that have been taken on board in the proposed legislation for safety in the offshore oil and gas industry.</td>
<td>As noted above several stakeholders raised the need for the directive and the proposed legislation to work together. It was also stated that there are many aspects in the proposed legislation which it would be appropriate to include in the directive, for example, independent verification of onshore wells. It is therefore concluded that the directive should be modified to work with the proposed legislation on the safety of offshore oil and gas prospection, exploration and production activities and should take on board the good practices included in the current draft of the proposed legislation. (Also see Sections 6.1.1.1, 6.1.1.4.6 and 6.2.2.1 of the main report).</td>
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<td>R5. The directive should be modified such that it can be implemented in a manner that is proportionate to the inherent risk of the mineral extraction through drilling activity (i.e. oil and gas vs. salt, etc.).</td>
<td>Following up on the recommendation to maintain the risk based approach, and the recognition that the countries which do not have an offshore oil and gas industry did not see a need to modify the directive, it is concluded that it is important modifications should be made in the manner recommended. In this way the requirements for a major hazard mineral extraction through drilling industry (e.g. oil and gas) would not be imposed on a mineral extraction through drilling industry with a lower inherent risk (e.g. salt extraction). This should help maintain the situation where the administrative burden is seen by stakeholders as being “appropriate and acceptable”. (Also see Section 6.2.1.3 of the main report).</td>
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<td>R6. The directive should provide more clarity / be more balanced on its requirements in regard to the management of “Major Hazard Accidents” and “Occupational Health and Safety”.</td>
<td>From interviews one of themes expressed by several stakeholders is that the directive is more heavily focused on “occupational health and safety” issues rather than “major hazard” accidents. Based on the interview and survey responses, stakeholders from across the EU and EEA countries see the directive as covering “all hazards” to workers. This means they recognise it covers “major hazard” accidents as well as “Occupational Health and Safety”. They would like the directive’s requirements to be balanced and clear in their applicability to these different risk types. To achieve this, one suggestion is that the directive has separate sections to address these areas. Note that these accident types need to be defined so that it is clear that the directive covers the full range of hazards to workers in the mineral extraction through drilling industry. (Also see Sections 6.1.1.1, 6.1.1.3.2 and 6.2.2.1 of the main report).</td>
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<td>R7. The directive should be made more explicit regarding the management of drilling activities and well control.</td>
<td>This need was identified both in interviews and from the gap analysis, (where causes and contributory factors to past major accidents were compared to the directive’s current requirements). In interviews stakeholders stated that they found that the directive lacked detail on drilling activities and well control. In the gap analysis adequacy of well design and well control procedures were areas associated with causal factors associated with a major accident where there is a weakness in the directive’s specific requirements. Although the directive is limited in its requirements for control of hazards during drilling activities (related to mineral extraction), it is recognised that the directive’s risk assessment approach means that drilling activities should be covered. Also the practice in many countries is to have requirements in their National Legislation to support the management of drilling related risks. (Also see Section 6.1.1.4.1 of the main report).</td>
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<td>Recommendation</td>
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| **R8.** The directive should **clarify the roles and responsibilities of different parties involved in all stages of the mineral extraction through drilling lifecycle.** | From the interviews and the survey it was found that there is an established hierarchy amongst the various players starting with the licensee / concession holder at the peak of the pyramid and cascading downwards to various contractors / sub-contractors. The number of organisations can vary. It was found, however, that the focal point for worker safety responsibility according to national legislation can occur at various levels in the hierarchy in different the EC and EEA countries. Currently responsibility is assigned in different ways, using different principles and disparate terminology across the various EC and EEA countries. Clarifying the roles and responsibilities should include addressing the roles and responsibilities of licensees, owners, operators, contractors, sub-contractors, workers, etc. and their means and responsibility to work together for safety. This is particularly important as the existing employer / worker model reflected in the directives appears limited and one-dimensional given the complex network of players involved in some mineral extraction through drilling operations. In modifying the directive, the definitions / conventions established should be broad and flexible enough to accommodate the range or organisational situations and regulatory structures found across the EC and EEA countries.  
(Also see Sections 6.1.1.5 and 6.1.2.1 of the main report). |
| **R9.** The directive should **outline the structure and / or functions to be undertaken by the regulator.** | In the interviews there was discussion on the role of the regulator. It was pointed out that the directive currently does not cover this, however the proposed legislation does and this was seen positively. The regulators play a key role in ensuring the overall objectives of legislation are met and given that the regulator’s activities are not currently covered in the directive this should be addressed in any update. Such recognition can take the form of setting out high level expectations for the regulator. Details of regulator good practice can also be presented in guidance. This can cover the regulators responsibilities in enforcing their national legislation, especially in the regulation of major accident hazards  
(Also see, for example Sections 6.1.1.1 and 6.1.1.4.6 of the main report). |
| **R10.** The directive should include a specific requirement on the responsible party to have a **management system** to implement the requirements of the directive and to drive continuous improvement. | The importance of having a management system, and the need for this aspect to be clearly outlined in the directive, came through clearly from the gap analysis. Directive 92/91/EEC and the framework Directive 89/391/EEC do not include an explicit requirement for employers to have a health and safety management system, however many of their requirements would be naturally implemented through a management system. Note that when implementing this recommendation it should also address the specific management system issues identified in the gap analysis.  
(Also see Section 6.1.1.4.1 of the main report). |
R11. The directive should ensure the need to identify (through the risk assessment process) critical equipment, activities and competencies in delivering safety, and should include a requirement for follow on verification of the critical equipment, activities and competencies along with a continuous improvement processes.

As stated earlier, the use of risk assessment was found to be common across the EU and EEA countries, however the opportunity for the directive to be enhanced to emphasise the requirement for risk assessment to define the “safety critical” aspects and their expected performance (to protect workers) to deliver an acceptable level of safety was identified.

The gap analysis identified “identification and analysis of tasks critical for the management of safety” as important. This same point also came through more broadly in the interviews along with the importance that the health and safety report needs to clearly identify what is “critical” for safety and the “assurance” / “verification” activities needed to demonstrate these aspects are functioning as desired. Demonstration that safety critical aspects are functioning as required provides regulators with confidence that worker safety is being protected.

It was found that not all countries have verification requirements embedded in their national legislation. Additionally it was found that the international operators’ good practice included independent verification. Therefore, when addressing this recommendation modifications to the directive should include the need for “independent verification” coupled with the expected level of independence (i.e. either 2nd or 3rd party).

It is acknowledged that Article 6, Para 3a of the framework directive alludes to the need to assure the outcomes of the risk assessment process.

(Also see Section 6.1.1.4.5 of the main report).

R12. To remove elements in the current directive which would better fit in supporting guidance and standards documents (e.g. those outlined in Item 7 of Part B relating to sanitary equipment).

Through the interviews, stakeholders pointed out that the directive contains some prescriptive requirements that would be better located in supporting guidance.

Stakeholders also stated that it is generally better to include “none goal oriented” requirements in guidance or standards for the following reasons:

- This allows alternative innovative approaches to be taken that provide the same or a better level of safety. (Clearly this has to be demonstrated through risk assessment).
- Guidelines and standards can be updated faster than a directive or national legislation when there is learning from events, new technologies, etc. which highlight weaknesses in current standards or guidance and better approaches which should be applied in the future.

Any prescriptive elements put within supporting guidance documents must be underpinned by a legal goal setting basis in order to maintain their basis in law.

(Also see Sections 6.1.1.2 and 6.2.2.2 of the main report).

1.5.3 Question 3 - Are Other Actions Needed?

Conclusion from this review: Yes.

Based on the findings of this review, DNV has concluded that the EC should takes actions, in addition to modifying Directive 92/91/EEC, to increase its effectiveness. The findings that lead to this conclusion are presented in Table 1.4. Recommendations for specific actions are made in Section 1.5.4.
Table 1.4 Findings leading to the conclusion that other actions are needed

<table>
<thead>
<tr>
<th>Finding</th>
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<tr>
<td>National legislation implementing the requirements of Directive 92/19/EEC vary in some regards.</td>
<td>From the review it has been found that, although there is a lot of commonality, there are differences in the degrees to which legislation is goal oriented vs. prescriptive, how it is enforced, the boundaries of its applicability, etc. Some of these differences are due to the local understanding of where the directive is applicable when putting into National Legislation. If there were guidance in support of the directive which provides clarity on such matters then greater consistency could be achieved over time.</td>
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<td>To help address this (and other areas), stakeholders were asking for the EC to provide guidance in support of the directive.</td>
<td>It must be noted that the directive sets “minimum” requirements and there are areas where countries have clearly chosen to extend the application of their National Legislation implementing the requirements of the directive beyond these requirements. One example is where National Legislation seeks to protect the public, as well as workers, which responses to surveys shows to be the case in Cyprus, Luxembourg, Portugal, Slovenia, Sweden, UK and Norway. The examples above relate to areas where clarity is sought on “minimum” requirements.</td>
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<td>In other areas greater clarity would be desired by stakeholders. For example in in the workplace boundaries. Here there is variability in where National Legislation which implements the requirements of Directive 92/91/EEC applies. For example Article 2 Item (b) defines the workplace as follows:</td>
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<td>“workplace shall mean the whole area intended to house workstations, relating to the immediate and ancillary activities and installations of the mineral-extracting industries through drilling, including accommodation, where provided, to which workers have access in the context of their work.”</td>
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<td>How this has been interpreted in different countries can be seen in Figure 1.1.</td>
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<td>Other areas where stakeholder interviewers were asking for guidance included:</td>
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<td>• Clarity on the boundaries and overlaps between Directive 92/91/EEC and other EU legislation.</td>
<td>Other areas where stakeholder interviewers were asking for guidance included:</td>
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<td>• Guidance to support regulators to put in place regulatory systems and on what is good regulatory practice, in regard to implementing Directive 92/91/EEC in their country.</td>
<td>At a national level providing guidance in support of legislation is common, for example the HSE in the UK have significant guidance that is available to industry and unions to support compliance with the UK legislative requirements and the protection of worker safety. For countries with limited resources the provision of guidance is more challenging. The EC does not currently have any guidance that support stakeholder to comply with the requirements of Directive 92/91/EEC.</td>
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<td>(Also see Sections 6.1 and Section 6.2.2.1 of the main report).</td>
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<td>Finding</td>
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<td>Countries implementing national legislation for the first time have a steep learning curve and would like support.</td>
<td>This finding relates primarily to the countries where a new mineral extraction industry is starting in their jurisdiction (for example Cyprus which has recently started offshore oil and gas exploration in its waters). It is also important for countries which are changing their legislation to better implement the requirements of the directive given potential growth in a mineral extraction industry (e.g. Ireland where they have a small offshore oil and gas exploration industry and where the exploration is moving into the more challenging environment west of the country) or are implementing goal oriented legislation for the first time, (for example Romania as one of the newer members of the EU). In these cases there is an initial lack of experience and knowledge in the mineral extraction industry and/or goal oriented legislation for regulators, local industry and unions, (note that international companies tends to bring expertise from overseas). Stakeholders expressed a desire for support from the EC to enable the countries with these needs to learn from other countries with more a larger and mature industry and greater experience with the directive. (Also see Sections 6.1.3.2, 6.2.1.2 and 6.2.2.1 of the main report).</td>
</tr>
</tbody>
</table>
| The protection of workers would benefit from sharing learning and experience across EU and EEA countries. | Stakeholders can see a benefit in there being more sharing of learning and experience across EU and EEA countries. This was seen as helping:  
- Countries moving up the learning curve (see the previous finding).  
- More rapid implementation of actions across EU and EEA countries to better protect the safety of workers in this industry based on learning from experience, including, for example, from:  
  o Accidents and near misses.  
  o Initiatives.  
  o Implementation of new guidance, standards, etc.  
  o Regulatory practices.  
(Also see Sections 6.2.1.2 and 6.2.2.1 of the main report). |
Figure 1.1 “Workplace / geographical extent” covered by the national legislation that implements the requirements of Directive 91/92/EEC for offshore drilling extraction through drilling
1.5.4 Question 4 - What are the Actions that Should be Taken to Increase the Effectiveness of the Directive?

Specific recommendations for actions to enhance the effectiveness of the directive are presented in Table 1.5 along with the findings which lead to them.

Table 1.5 Recommendations for actions to be taken to increase the effectiveness of the directive

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Discussion</th>
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<tbody>
<tr>
<td>R13. The commission facilitates and supports the development of guidance documents in support of the directive which:</td>
<td>As discussed in Section 1.5.3 there is a demand from stakeholders for the EC to provide guidance in support of Directive 92/91/EEC. Other EU directives (e.g. Directive 2002/49/EC on environmental noise) include provisions that encourage the commission to develop guidelines (in certain areas) that help to aid the achievement of legislative goals; thus there is precedent for doing so in the context of the directive. It is recognised that this approach is more common in the sectorial based directives as opposed to those under the EU’s health and safety at work framework.</td>
</tr>
<tr>
<td>a. Clarify the scope of Directive 92/91/EEC, including:</td>
<td>Note an implication of clarifying guidance is that some EU and EEA countries may need to adjust scope of their national legislation that implements the requirements of Directive 92/91/EEC to areas not currently covered under their legislation.</td>
</tr>
<tr>
<td>i. Stating that all hazards to workers are to be covered, and defining “Occupational Health and Safety” and for “Major Hazards”.</td>
<td>From the review it is clear that the directive is interpreted as covering all hazards. With an update to the directive in regard to making explicit about requirements for “Occupational Health and Safety” and for “Major Accident” management (see Recommendation R6), it is seen that guidance to define these hazard types and to ensure that it is understood that they cover all hazards to workers would be of assistance to those interpreting the directive and its requirements. (Also see Section 6.1.1.3.2 of the main report).</td>
</tr>
<tr>
<td>ii. The types of mineral extraction through drilling activity which are covered.</td>
<td>This should address the areas where this review identified differences in the types of mineral extraction covered by national legislation that implements the requirements of Directive 92/91/EEC. Guidance should answer questions such as: “Are all drilling activities covered?”, “Is water a mineral?”, “What about geothermal?”, “Is taking a core sample mineral extraction?” etc. It is recommended that the scope is clarified for types of drilling where the hazards to people related to the drilling activity / well production are posed by the substance (mineral or other, e.g. water or CO₂) being extracted / stored or other substances which could be encountered. (Also see Section 6.1.1.3.3 of the main report).</td>
</tr>
<tr>
<td>iii. The life cycle stages of the mineral extraction through drilling that are covered.</td>
<td>There are differences in which mineral extraction through drilling lifecycle stages are covered by national legislation implementing the requirements of the directive across EU and EEA countries. Exploration drilling and production are said to be covered in all EU and EEA countries, however seismic surveys, site construction and decommissioning / abandonment may or may not be covered. (Also see Section 6.1.1.3.4 of the main report).</td>
</tr>
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</table>
### MANAGING RISK

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<th>Recommendation</th>
<th>Discussion</th>
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| iv. **The workplace assets** covered (and, for what is not covered, what is the applicable directive(s)).**                                                                 | This relates to the mineral extraction through drilling workplace interpretation as discussed in Section 1.5.3 and illustrated in Figure 1.1. Guidance should answer questions such as: “Are pipelines associated with a production facility covered?” and “Is a gas plant miles away from the extraction site covered?”.

Where the new guidance produced in response to this recommendation defines a workplace asset as not being covered by Directive 92/91/EEC, the guidance should go on to identify which worker safety directives apply to the workplace asset?

(Also see Section 6.1.1.3.6 of the main report).                                                                                          |
| v. **The boundary of the workplace under the directive.**                                                                         | Clarifying guidance in this area is more important for offshore mineral extraction through drilling than onshore. From the review it was found that there are differences between countries in when a worker enters the workplace. For example for a worker working on an offshore rig and travelling their by helicopter, in some countries the workplace for which the national legislation implementing the requirements of Directive 92/91/EEC is deemed to start at the heliport check-in and covers helicopter travel, where as in other countries it starts at the helipad on the offshore rig.

Note for onshore it was clear that inside the site boundary is the workplace.

(Also see Sections 6.1.1.3.4 and 6.1.1.3.6 of the main report)                                                                              |
| b. assist regulators:                                                          |                                                                                                                                                                                                                                                                                                                                                           |
| i. In what to do to setup and operate a legislative system to help administer the national legislation that implements the requirements of the directive.                                                                 | As discussed in Section 1.5.3, stakeholders new to a mineral extraction through drilling industry or new to a goal oriented regulatory regime expressed a desire for added assistance to help them up the learning curve. Having guidance in this area would be of assistance. This could include a route map in implementation and guidance on good practices (for example for a regulator it could explain how to design and structure inspection on a risk basis).

(Also see, for example Sections 6.1.2.2, 6.1.3.1 and 6.2.2.1 of the main report).                                                            |
| ii. To undertake their role and to put in place activities which support building a good safety culture and drive continuous improvement. | In the interviews there was significant discussion on activities that drive good safety beyond the requirements of legislation. The countries with mature major hazard drilling extraction through drilling industries presented many activities they undertake that support this goal. If the EC pulled together examples of good practice to share with regulators, this would provide benefit.

There were 2 key elements that were expressed by stakeholders as important in developing a good safety culture and driving continuous improvement. As such this guidance should cover joint stakeholder collaboration (regulators, industry and unions) and having a continuous improvement process (a plan-do-check-act (PDCA) cycle) which includes measuring and monitoring the safety performance of the industry.

(Also see Sections 6.1.1.2, 6.1.1.4, 6.1.3.1, 6.1.3.3, 6.2.1.2, and 6.2.2.1 of the main report).                                              |
| c. Set-out the information that it is expected should be made available for a regulator to undertake their role. | The review illustrated some variations exist in what documentation and information is made available and on what basis and frequency between EU and EEA countries. Guidance on the types of information that industry can supply to regulators and what it aids regulators in gaining assurance over would assist. This should cover the lifecycle stages including: the design / build stage, drilling activities, production, etc.

(Also see Sections 6.1.2.1 and 6.1.1.4.6 of the main report)                                                                                 |
MANAGING RISK

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| d. Clearly defines terms employed e.g. “the employer”. | This recommendation comes from the finding that there are different interpretations of the directive in its transposition into national legislation. Having good definitions of terms will help in gaining commonality across EU and EEA countries.  
(Also see Section 6.1.1.5 of the main report). |
| e. Describe the interfaces between the directive and other directives / legislation. | Primarily the stakeholders raised the issue of how Directive 92/91/EEC overlaps with the proposed legislation on safety in the offshore oil and gas industry. Additionally they raised the need to understand the borders between and overlaps amongst all directives that affect their industry. Guidance on this would be of assistance.  
Such guidance should also explain how directives work together where there are clear overlaps. This is of specific relevance for Directive 92/91/EEC and the proposed legislation for offshore oil and gas.  
(Also see Sections 6.1.1.3.2, 6.2.1.2 and 6.2.2.2 of the main report). |
| f. Explain the process from risk identification through to gaining assurance that risks are being appropriately managed, (including the importance of identifying what is “critical” to managing safety) | For the countries with mature oil and gas industries which have adopted a largely the goal oriented legislative framework, the stakeholders were familiar with the process from risk identification through to gaining assurance that risks are being appropriately managed. These countries generally took a broad view on using the process to identify what is critical in managing the risks of mineral extraction through drilling activity, considering hardware, systems and processes, and culture and competencies (plant – process – people). In these countries the assurance requirements are consequently broadly focused.  
In less mature countries, or those new to goal oriented legislation, the understanding of this process to deliver assurance over the broad range of aspects critical to managing the risks could be enhanced. This would assist in delivering protection for workers by helping not only ensuring good risk assessment but also ensuring verification and inspection focused on the broad range of aspects (plant – process – people) that are critical to managing the risks. Thereby going beyond a physical inspection of hardware.  
From the interviews the importance of risk assessment to identify what is “safety critical” also came through. It was stated that it is these aspects, (tasks, equipment, competencies, etc.) that the safety and health document needs to clearly identify and the “assurance” / “verification” activities needed to demonstrate they are working as desired. Demonstration that safety critical aspects are functioning as required provided regulators with confidence that worker safety is being protected.  
Guidance which explains the link from risk identification, to risk assessment, to identifying equipment, activities or competencies critical to maintaining the integrity of any facility engaged in mineral extraction through drilling activities (and defining their functionality), to inspection and verification activities would therefore assist stakeholders. This should all be in the context of a safety and health management system.  
It is noted that this is achieved to some extent in the commission document “Guidance on risk assessment at work” (EC, 1996) developed in support of the framework directive (Directive 89/391/EEC).  
(Also see Section 6.1.1.4.1, 6.1.1.4.2, 6.1.1.4.4 and 6.1.1.4.5 of the main report). |
MANAGING RISK

Recommendation | Discussion
--- | ---
g. Outline good practice for workforce engagement. | There were a range of approaches to engage the workforce in safety both at a facility level and at a national level.

For example there were different approaches followed in regard to the safety representative. A safety representative may represent the workforce for safety only on a full time basis, or have the responsibility while also needing to undertake their normal job, or they represent workers on all issues. What was clear from interviews was that:

- Where the representative also has a day job they can find it challenging to be as active on safety as some stakeholders would like. Examples were given where they needed to undertake training for the role when they are “off work”.

- Where safety representation is part of the worker representation role for an individual, safety was said to be lower on their agenda than, for example, pay and working conditions.

There are other challenges for the offshore environment where the working patterns (e.g. 12 hour shifts and 2 weeks on – 2 week off shift pattern) also make it challenging for safety representatives to attend and contribute on an on-going basis.

Given differences it would be good for the Commission to produce guidance on good practices for engagement (including guidance on good practices for the role and responsibilities of safety representatives building on the goals outlined in Articles 10 and 11 of Directive 89/391/EEC). (Also see Section 6.1.3.3 of the main report).

R14. The Commission should consult internally with those responsible for protecting the general public to determine if there should be guidance on the appropriateness of countries extending the scope of national legislation to cover the general public. | Protection of the general public is clearly outside the scope of Directive 92/91/EEC. It is also clear that the general public are exposed to risks from mineral extraction through drilling activities. This was illustrated in interviews with German stakeholders where they discussed the risks from the pipelines carrying gas containing H₂S between onshore wells and processing plants.

Responses from some countries indicate that they have extended the scope of their legislation implementing the requirements of Directive 92/91/EEC to include protection of the general public (as well as the workers), see Figure 1.2.

Given the above it is recommended that the Commission should consult internally with those responsible for protecting the general public. They should determine if there should be guidance on the appropriateness of countries extending the scope of national legislation to cover the general public and that this should consider not only the well site, but also the associated facilities covered under the directive. (Also see Section 6.1.1.3 of the main report).
**Recommendation** | **Discussion**
--- | ---
R15. The Commission should investigate what further role it could take and how it can work with stakeholders to agree relevant guidelines, practices and technical standards to be used across EU and EEA countries. | There is guidance that is available to the industry. The source and level of the guidance varies by country, see Figure 1.3. An issue raised in interviews was that the “practices and standards” promoted by regulators across the EU and EEA countries vary, and the overlap in the regulator approved standards between countries is very limited.

For industry, demonstrating compliance with national legislative provisions (including those stemming from the directive) in the various EC and EEA countries often involves fulfilling the requirements of defined practices and technical standards (e.g. BS, Norsok, OGP, etc.). The primary advantage of using technical standards is that they can be reviewed and improved (based on learning / experience) more quickly than the national legislation. From the interviews it was learnt that the technical standards adopted across the countries vary and that this situation can leads to barriers / inefficiencies in working across borders. Particularly for offshore mobile rigs.

The directive (in its current format) does not make reference to any guidelines, practices or technical standards for use in the mineral extractive industries. Whilst it is evident that there are specific reasons that the practices and standards that apply vary (e.g. differences in geography and thus risk profile; artic versus the Mediterranean environments), developing more consistency (i.e. harmony) on the guidance, practices and technical standards used across the EU and EEA would help level the regulatory environments and assist industry in complying. Additionally this will enable companies to operate more easily across EU and EEA country borders.

The Commission could take a role in working with stakeholders to agree relevant technical standards to be used across EU and EEA countries, at least for a core set of standards.

The Commission supporting / facilitating the development of harmonised technical standards is not without precedent. It currently does so and a number of harmonised standards (EC, 2012b) have been developed which are presently in use for a number of economic sectors/products; none of which specifically relate to the mineral extractive industries.

The use of harmonised standards (such as harmonised EU standards under the Machinery Directive 206/42/EC) would increase the working efficiency of operators working in more than one country. It will also assist in developing and ensuring consistent working practices the across the EU and EEA.

The Machinery Administrative Cooperation Group (AdCo) and the EU Machinery Directive Interest Group and EU Advisory Committee on Safety and Health standardisation could assist with this recommendation.

(Also see Section 6.1.1.2, 6.1.3.1 and 6.2.1.2 of the main report).

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3 It is noted that there is European harmonised standard for pressure equipment and this will apply to any pressure equipment used in the mineral extractive industries.

4 A harmonised standard is a European standard elaborated on the basis of a request from the European Commission to a recognised European Standards Organisation to develop a European standard that provides solutions for compliance with a legal provision. Such a request provides guidelines which requested standards must respect to meet the essential requirements or other provisions of relevant European Union harmonisation legislation.
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<th>Discussion</th>
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| **R16.** The Commission should look to how it can support putting in place engagement forums for learning and a continuous improvement loop that supports the maintenance and improvement of supporting materials including:  
  b. Technical Standards. | The review heard from stakeholders that having a continual improvement loop in place to maintain and update all aspects of their national legislative environment was a key aspect to the success in protecting the safety of workers in the industry.  
  Also it is clear that updating guidance and standards can be achieved more quickly than updating legislation.  
  Continuous improvement loops (systems and processes) help can make sure the guidance and standards are updated promptly to reflect learning from experience and accidents. This should include developing engagement forums between the primary stakeholders (regulators, industry and unions) where learning (e.g. from accidents, inspections, etc.) is shared and used as input to the continuous improvement activities. It is noted that this has started for one stakeholder group (the regulators) with the recently created Offshore Oil and Gas Authorities Group (EU, 2012). (Also see Sections 6.1.1.2, 6.1.2.2, 6.1.3.2, 6.1.3.3, 6.1.2.1 and 6.2.1.2 of the main report). |
| **R17.** The Commission should investigate what role it could take and how it can support regulators in an early phase of implementing their national legislation for the requirements of Directive 92/91/EEC to help them to build the capabilities and experience they require to effectively regulate the industry. | From the review it was seen that where there is a significant industry then the regulators have significant resources to develop/update, roll-out, support and enforce the legislation that implements the requirements of Directive 92/91/EEC in their country.  
  For the countries with new / small oil and gas industry it was found that their regulatory resources and their knowledge of the industry, its risks and how to manage the risks was more restricted. In these countries the regulator stakeholders would like to get support to build their capabilities. The same need to build capability was also expressed for the countries changing to goal oriented legislation.  
  It is seen as important that regulators need to build and have the capabilities to successfully regulate the industry, and thereby to help ensure worker safety.  
  For those needing to build capabilities, support from the Commission to build capabilities such that they can sustainably and successfully deliver the requirements of Directive 92/91/EEC would be beneficial. (Also see Section 6.1.1.2, 6.1.2.2 and 6.2.1.2 of the main report). |
Figure 1.2 “Who is protected” by the national legislation that implements the requirements of Directive 91/92/EEC by population groups
Figure 1.3 Availability of Guidance to Support Industry to comply with National Legislation Implementing the Requirements of Directive 92/91/EEC
2 REFERENCES


European Commission (EC), 2011, “proposal for a service contract to analyse and evaluate the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling”. Invitation to tender No VT/2011/042 documents.


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RÉSUMÉ DE
L’ANALYSE ET EVALUATION DES EFFETS DE L’APPLICATION PRATIQUE DES LEGISLATIONS NATIONALES EN RELATION A LA SECURITE ET A LA SANTE AU TRAVAIL DANS LES ACTIVITES D’EXTRACTION MINIERE PAR FORAGE

EUROPEAN COMMISSION
DG Employment, Social Affairs and Inclusion

Employment and Social Legislation, Social Dialogue
Health, Safety and Hygiene at Work

EUROPEAN COMMISSION CONTRACT REFERENCE VC/2011/0499
REPORT NO./DNV REG NO.: 1 / 13YD88G-1
REV 1, 15TH FEBRUARY 2013
DET NORSKE VERITAS
Rapport pour la Commission Européenne
L’analyse et évaluation des effets de l’application pratique des législations nationales en relation à la sécurité et à la santé au travail dans les activités d’extraction minière par le forage

MANAGING RISK
L’analyse et évaluation des effets de l’application pratique des législations nationales en relation à la sécurité et à la santé au travail dans les activités d’extraction minière par le forage

For: European Commission, Directorate General Employment, Social Affairs and Inclusion, EMPL.B.3, B-1049 Brussels, Belgium.


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Project No.: PP030087

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Organisation Unit: DNV UK Advisory Services

Report No.: 13YD88G-1

Summary:
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RÉSUMÉ

1.1 Contexte

L’Union Européenne (UE) cherche a) à garantir la sécurité et protéger la santé des travailleurs et b) à encourager l’amélioration de l’environnement de travail pour les travailleurs dans tous ses États membres. Elle le fait par le biais de directives ou de lois qui fixent les obligations pour toutes les activités associées à la santé et à la sécurité au travail (et ainsi à la protection des travailleurs). Le droit de mettre en place des directives dans ce domaine vient à l’origine de l’article 153 du Traité de Fonctionnement de l’Union Européenne.

L’UE a mis en place une large gamme de directives qui définissent les exigences minimales en matière de la santé et de la sécurité pour la protection des travailleurs. La directive 89/391/EEC est la directive principale dans ce domaine. Celle-ci est la « directive cadre », et son objectif est d’introduire des mesures qui encouragent les améliorations de la santé et de la sécurité au travail. Elle s’applique à tous les secteurs, autant public que privé (à l’exception de certaines activités spécifiques du service public, comme l’armée et la police). Elle définit des principes génériques de prévention et de protection des travailleurs vis-à-vis de multiples sources de risque.


Les raisons suivantes sont les moteurs de la révision:

- L’accèsion à l’UE d’états membres supplémentaires depuis la dernière révision.
- Activités de forage et de production pétrolière:
  - Dans des zones où les activités de prospection ou production ont lieu pour la première fois (par exemple, la prospection pétrolière dans les eaux chypriotes).
  - Dans des environnements plus complexes et difficiles (par exemple l’ouest des Îles Shetland et la zone Arctique).
- Conscience accrue des risques associés à la prospection pétrolière suite à l’accident du Deepwater Horizon.
- La législation proposée par la Commission Européenne qui couvre les accidents majeurs dans les activités de prospection, exploration et production d’hydrocarbures en mer.
1.2 Objectifs
Les objectifs principaux de la revue sont les suivants:

1. Analyser et évaluer l’application pratique des législations nationales associées à la sécurité et à la santé au travail dans les industries d’extraction minière par le forage.


6. Analyser si d’autres options (par exemple des instructions) pourraient être utilisées pour augmenter l’efficacité de la Directive 92/91/EEC.


1.3 Champ d’Application de la Revue
Le champ d’application couvre la sécurité et la santé au travail dans les industries d’extraction minière par forage dans les états membres de l’UE et les pays de l’EEA.

Le cahier des charges exige que la revue identifie, analyse et évalue:

a. Les méthodes de prévention spécifiques adoptées par les États Membres et par les entreprises et les organisations du secteur public, par exemple les mesures organisationnelles.

b. L’équilibre d’attention entre les mesures de contrôle d’accident majeur comparée avec les systèmes conventionnels de sécurité et santé du travail.

c. L’impact des méthodes de prévention spécifiques à tous les niveaux de protection de sécurité et de santé au travail.


e. Tous les effets secondaires négatifs ou positifs résultant de l’application pratique de la législation sur la sécurité et la santé au travail.

Dans tous les cas, les effets sur les petites et moyennes entreprises (PME) et les travailleurs indépendants doivent être considérés. Par ailleurs il était demandé que les analyses soulignent les différences principales entre les 27 États Membres, et que les conséquences potentielles sur la sécurité des opérations en mer à travers l’Europe soient examinées.
1.4 Approche

Afin de structurer le travail et de promouvoir une approche systématique, les activités commencèrent par élargir les objectifs en une liste de questions/réponses organisées des thèmes génériques suivants :

- Informations contextuelles (niveau d’activité actuel / futur, tendances historiques, etc.)
- Les approches réglementaires adoptées à travers les pays de l’UE et de l’EEA.
- Le champ d’application de la législation nationale.
- Exigences, pratiques et mise en application.
- Efficacité / évaluation.
- Considérations futures

L’étude a ensuite répondu aux questions en utilisant les méthodes suivantes :

- Analyse d’écart entre la directive et les conclusions d’une sélection d’accidents majeurs.
- Entretiens semi-structurés avec les parties prenantes dans les pays sélectionnés.
- Sondage d’un groupe élargi de parties prenantes dans tous les pays concernés.
- Analyse de l’activité de l’industrie et de sa performance en termes de sécurité à partir d’informations dans le domaine public, d’informations obtenues lors des entretiens et sondages afin de produire une simple vue d’ensemble de l’extraction minière par forage dans les pays de l’UE et de l’EEA.
- Triangulation des conclusions des activités ci-dessus.

1.5 Discussion et Recommandations

Une gamme variée de thèmes concernant la directive ont été identifiés durant ce projet. Ces thèmes couvrent des aspects comme :

- si des modifications de la directive sont nécessaires
- Si tel est le cas, quelles modifications devraient être effectuées et où (à l’intérieur de la directive ou bien dans les documents de soutien de la directive tels que les textes d’explication).
- Des suggestions sur la manière selon laquelle ces modifications devraient être effectuées, ainsi que sur le rôle des parties prenantes au processus de modification.

Afin de donner un sens de priorité / importance aux résultats de ce projet, les conclusions et recommandations sont présentées en considérant les questions fondamentales qui forment le noyau de cette revue :

- Question 1 - Y-a-t-il besoin de modifier la Directive? (couvert dans la section 1.5.1)
  - Question 2 -, si oui, Quelles modifications sont nécessaires? (couvert dans la section 1.5.2)
1.5.1 Question 1 - Y-a-t-il besoin de modifier la Directive?

Conclusion de la revue: Oui

En se basant sur les conclusions de la revue, DNV conclut que la Directive 92/91/EEC devrait être mise à jour. Il est important de reconnaître que cette conclusion est en grande partie due aux besoins de l’industrie d’extraction minière par forage, et plus spécifiquement aux besoins de l’industrie pétrolière. Les points qui amènent à cette conclusion sont présentés dans le Tableau 1.1.

Les recommandations pour les modifications spécifiques à la directive sont présentées en section 1.5.2.

Table 1.1 Principales conclusions conduisant à la conclusion que des changements à la directive sont nécessaires

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<td>Les parties prenantes dans les pays où la directive présente le plus d’importance pour la sécurité des travailleurs, étant donné le risque inhérent associé avec leur industrie d’extraction minière par le forage, ont affirmé clairement qu’elles désireraient que la directive soit modifiée. La mise à jour de la directive permettrait ainsi l’amélioration de la protection des travailleurs dans les industries d’extraction minérale par le forage à risque majeur.</td>
<td>De façon spécifique, les parties prenantes dans la majorité (70%) des pays concernés par l’exploration et la production pétrolière en mer sont d’avis que la directive devrait être modifiée.</td>
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<td>La CE veut s’assurer que les travailleurs dans l’industrie pétrolière en mer sont protégés. Ceci est confirmé par leur souhait de focaliser sur cette industrie cette revue et la nouvelle réglementation proposée. Cette position est compréhensible, étant donné que les risques associés avec le forage pétrolier en mer (par exemple éruption, sites isolés, forage en eaux profondes, potentiel pour pollutions environnementales graves) sont les plus importants si l’on considère les activités d’extraction minière par le forage.</td>
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</tr>
<tr>
<td>DNV remarque que les pays sans industrie pétrolière (extraction minière par forage à haut risque) ne considèrent pas que la directive ait besoin d’être modifiée.</td>
<td></td>
</tr>
</tbody>
</table>

(Voir également Section 6.1.1.1 du rapport principal).
### Conclusion

Les bonnes pratiques de l’industrie ont évolué par rapport à ce qu’elles étaient en 1992. Dans la même période, les environnements réglementaires / législatifs nationaux ont aussi évolué. Cependant, la directive est restée inchangée depuis son introduction.


Il est reconnu que le dessein de la directive, c’est-à-dire l’adoption d’une approche basée sur le risque et la nécessité que les avances technologiques soient prises en compte (par le biais de la directive-cadre), est conçu afin que la directive reste valable même si les pratiques et technologies évoluent. Ces caractéristiques de la directive sont également conçues pour assurer que les normes minimales évoluent (s’améliorent) avec le temps. Étant donné que la Directive 92/91/EEC n’a pas été modifiée depuis son introduction il y a 20 ans, il peut être conclu que sa structure a été suffisamment robuste, en maintenant sa validité pendant cette période.

Néanmoins, des domaines nécessitant des mise à jour ont été identifiés. Les modifications suggérées sont discutées dans les sections suivantes, sous la forme de la question « … Quelles modifications sont nécessaires? » (Voir également Section 6.2.1.2 et 6.2.2.2 du rapport principal).

### Discussion

Ce qui a été identifié (par la revue) comme étant limité.

Les limites pourraient avoir un impact négatif sur sa capacité à promouvoir la protection des travailleurs.

Alors que les éléments centraux de la directive (l’approche ciblée, la nécessité des évaluations du risque et le besoin de prendre en compte les avancées technologiques), permettent d’assurer sa validité pour couvrir une gamme élargie de types de risques, d’activités et de situations (ce qui la rend robuste), certains domaines ont été identifiés comme nécessitant des améliorations ou des développements. Ces domaines incluent :

- Les conditions minimales permettant le contrôle des risques pendant les activités de forage.
- La directive est considérée par plusieurs parties prenantes comme étant plus focalisée sur les questions de “santé et sécurité au travail” que sur les “accidents majeurs”.
- Il est nécessaire d’assurer la clarté sur le champ d’application couvert par la Directive 92/91/EEC, en particulier en ce qui concerne :
  - Les types d’activités d’extraction minière couverts.
  - Les phases du cycle de vie de l’extraction minière auxquelles elle devrait s’appliquer.
  - Les limites géographiques des installations d’extraction minière dans lesquelles la directive devrait s’appliquer (par exemple les installations en mer, les pipelines et installations connectées).
- Clarté améliorée des concepts-clés utilisés dans la directive (par exemple l’”employeur” et comment celui-ci s’associe avec le réseau des parties concernées).
- De la même façon, il y a besoin d’une plus grande clarté sur les rôles et responsabilités des parties concernées.
- L’absence d’une exigence spécifique pour que la partie responsable mette en place un système de gestion de la sécurité.

(Voir également Sections 6.2.2.2, 6.1.1.4.1, 6.1.1.5 et 6.1.2.1 du rapport principal).
1.5.2 Question 2 - Quelles modifications sont nécessaires?

Si la Commission Européenne accepte la conclusion de DNV sur la nécessité de mettre la Directive 92/91/EEC à jour, des recommandations spécifiques pour améliorer la directive, résultant de la revue, seront présentées dans Table 1.2 et Table 1.3, avec une discussion des points qui les ont engendrées.

Les premières recommandations présentées dans Table 1.2 couvrent des parties de la directive que DNV suggère de maintenir. Les recommandations suivantes dans Table 1.3 couvrent les modifications / mises à jour préconisées pour améliorer la directive.

Table 1.2 Recommandations sur les aspects de la directive devant être maintenus

<table>
<thead>
<tr>
<th>Récommandation</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1. La Directive 92/91/EEC devrait être maintenue comme une directive (et ne pas être transformée en réglementation ou supprimée)</td>
<td>Il fut évident que la culture, les systèmes légaux et l’histoire des différents pays sont différents, et l’approche de la directive permet la flexibilité d’appliquer la législation de l’UE d’une manière qui soit appropriée pour la situation du pays. Ceci fut identifié comme important par plusieurs des parties prenantes interrogées. Aucune des parties prenantes pendant la revue n’a proposé que la directive soit abrogée ou qu’elle soit transformée en règle de conduite. Il fut noté que la base légale actuelle permet seulement l’adoption des directives dans le domaine de la santé et de la sécurité au travail (voir aussi Section 4). Il est donc entendu que la possibilité de convertir la directive en une réglementation de l’UE n’existe pas à présent. (Voir également Sections 6.1.1.2 et 6.1.1.4.3 du rapport principal).</td>
</tr>
</tbody>
</table>
**R2.** La Directive 92/91/EEC devrait garder une focalisation sur les approches ciblées

En se basant sur les opinions exprimées pendant les entretiens par les parties prenantes de plusieurs pays de l’UE et de l’EEA, il semble que l’approche ciblée a plusieurs avantages. Ceux-ci incluent :

- Fournir une flexibilité pour que l’industrie puisse protéger la sécurité des travailleurs de manière innovante (tout en continuant à utiliser des méthodes plus traditionnelles).
- Encourager l’amélioration en continu alors que les normes et attentes de sécurité augmentent.
- Être appropriée pour des environnements d’extraction minière par le forage plus difficiles (par exemple l’extraction minière par le forage dans les eaux arctiques, en mer à l’ouest de l’Irlande, en eaux profondes, etc.) aussi bien que les environnements rencontrés actuellement.
- Soutenir les régulateurs pour s’assurer qu’ils soient capables de répondre plus rapidement aux retours d’expérience (y compris d’accidents), et que des leçons tirées soient prises en compte par l’industrie d’extraction minière de manière prompte et efficace.

Cette approche peut être appuyée par des exigences prescriptives. Ceci est également discuté sous la recommandation R12).

(Voir également Sections 6.1.1.2 et 6.2.2.2 du rapport principal).

**R3.** La Directive 92/91/EEC devrait garder l’approche basée sur le risque

L’application des évaluations de risques et la mise en place d’une approche basées sur le risque sont encouragées par les parties prenantes à travers tous les pays de l’UE et de l’EEA. Les avantages, comme l’ont déclaré les parties prenantes, sont que cette approche permet aux régulateurs ainsi qu’à l’industrie de focaliser leurs ressources sur ce qu’il y a de plus important pour assurer la sécurité des travailleurs. Cette approche est également considérée comme permettant d’assurer que la réglementation nationale exécutant les exigences de la Directive 92/91/EEC ne soit pas un fardeau inutile. L’approche basée sur le risque est importante car les différentes activités d’extraction minière par forage dans les pays de l’UE et de l’EEA varient en matière de leur niveau de risque qui leur est inhérent. Par exemple, les activités pétrolières en mer dans des environnements toujours plus extrêmes et des eaux toujours plus profondes posent clairement un plus grand risque que l’extraction de sel sur terre. L’approche basée sur le risque signifie que les activités entreprises par l’industrie pour gérer le risque (ainsi que celles entreprises par le législateur pour s’assurer que les risques sont gérés de façon adéquate) sont proportionnelles au niveau de risque.

(Voir également Section 6.2.1.3 du rapport principal).

### Table 1.3 Recommandations visant à modifier la directive

<table>
<thead>
<tr>
<th>Recommandation</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4. La Directive 92/91/EEC devrait inclure les bonnes pratiques actuelles des régimes réglementaires des pays de l’UE et de l’EEA, y compris la plupart des points qui ont été pris en compte dans la réglementation proposée pour la sécurité dans l’industrie pétrolière en mer.</td>
<td>Comme il en fut question précédemment, plusieurs parties prenantes ont remarqué, pendant les entretiens, que la directive et la réglementation proposée doivent fonctionner ensemble. Il fut également déclaré qu’il existe des caractéristiques de la réglementation proposée qui devraient être incorporées dans la directive, par exemple la vérification par des parties indépendantes des puits terrestres. Il est donc conclu que la directive devrait être modifiée pour qu’elle fonctionne avec la réglementation proposée sur la sécurité des activités de prospection, d’exploration et de production pétrolière en mer, et qu’elle prenne en compte les bonnes pratiques incluses dans la version actuelle de la réglementation proposée.</td>
</tr>
</tbody>
</table>

(Voir également Sections 6.1.1.1, 6.1.1.4.6 et 6.2.2.1 du rapport principal).
<table>
<thead>
<tr>
<th>Recommandation</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R5.</strong> La Directive 92/91/EEC devrait être modifiée de telle façon qu'elle puisse être appliquée d'une manière qui soit proportionnelle au risque inhérent à l'extraction minière par le biais d’activités de forage (cad pour refléter l’exploration pétrolière comparée à l’extraction de sel).</td>
<td>À la suite de la recommandation de maintenir l’approche basée sur le risque, et étant donné que les pays qui ne possèdent pas d’industrie pétrolière en mer ne considèrent la modification de la directive nécessaire, il est conclu qu’il est important que les modifications soient faites de manière concertée. De cette façon, les exigences associées aux industries d’extraction minière par le forage à risque majeur (par exemple pétrolières) ne seraient pas imposées aux industries d’extraction minière par le forage à risque inhérent plus réduit (telles que l’extraction du sel). Ceci devrait permettre de maintenir la situation selon laquelle le fardeau administratif puisse rester “approprié et adéquat” pour toutes les parties prenantes.</td>
</tr>
<tr>
<td><strong>R6.</strong> La Directive 92/91/EEC devrait être modifiée afin d’apporter plus de clarté et d’être plus équilibrée entre les « Accidents À Risque Majeur » et la « Santé et Sécurité au Travail ».</td>
<td>Durant les entretiens, un des thèmes souvent répétés par les parties prenantes était que la directive est plus focalisée sur les sujets de « Santé et Sécurité au Travail » plutôt que sur les « Accidents À Risque Majeur ». En se basant sur les réponses des entretiens et des sondages, il est clair que toutes les parties prenantes à travers les pays de l’UE et de l’EEA considèrent que la directive couvre “tous les dangers” pour les travailleurs. Cela signifie qu’elles reconnaissent que la directive couvre les « Accidents À Risque Majeur » aussi bien que la « Santé et la Sécurité au Travail ». Néanmoins, elles aimaient que les exigences de la directive soient claires et équilibrées dans leur application à ces différents types de risques. Afin de renforcer ceci, il est suggéré que la directive ait des sections distinctes pour aborder ces sujets. Il est primordial que ces types d’accidents soient définis de telle façon qu’il soit clair que la directive <strong>traite de tous les risques</strong> associés aux travailleurs de l’industrie d’extraction minière par le forage.</td>
</tr>
<tr>
<td><strong>R7.</strong> La Directive 92/91/EEC devrait être plus explicite en ce qui concerne la gestion des activités de forage et le contrôle des puits.</td>
<td>Ce besoin a été identifié pendant les entretiens et à travers l’analyse d’écart, (dans laquelle les causes et les facteurs contribuant aux accidents majeurs ont été comparés aux exigences actuelles de la directive). Pendant les entretiens, des parties prenantes ont déclaré qu’il manquait des détails sur les activités de forage et le contrôle des puits. Dans l’analyse d’écart, la conception appropriée des puits et les procédures de gestion des puits ont été identifiées en tant que domaines associés à des facteurs contribuant aux accidents majeurs, la ou justement il existe une insuffisance dans les exigences spécifiques de la directive. Bien que la directive soit limitée dans ses exigences sur le contrôle des dangers pendant les activités de forage (associées à l’extraction minière), il est admis que son approche basée sur le risque signifie que les activités de forage devraient être couvertes. De plus, la pratique dans beaucoup des pays est d’avoir des normes stipulées dans leur Réglementation Nationale qui supportent la gestion des risques associés au forage.</td>
</tr>
</tbody>
</table>

Voir également Sections 6.2.1.3 du rapport principal.

Voir également Sections 6.1.1.1, 6.1.1.3.2 et 6.2.2.1 du rapport principal.

Voir également Section 6.1.1.4.1 du rapport principal.
### Recommandation | Discussion
--- | ---
**R8.** La Directive 92/91/EEC devrait définir clairement les rôles et responsabilités de toutes les parties impliquées dans chaque phase d’extraction minière par le forage  

Pendant les entretiens et le sondage, il est apparu qu’il existait une hiérarchie établie parmi les parties concernées, commençant par le concessionnaire en haut de la pyramide et descendant vers les différents sous-traitants. Le nombre des organisations peut également varier. Il semble également que le responsable de la sécurité des travailleurs défini par la réglementation nationale peut se trouver à différents niveaux de la hiérarchie en fonction des pays de l’UE et de l’EEA concernés.  

Actuellement, cette responsabilité est définie différemment, en utilisant des principes et des terminologies différentes dans chaque pays de l’UE et de l’EEA.  

La clarification des rôles et des responsabilités devrait inclure une définition claire des rôles et des responsabilités des concessionnaires, propriétaires, opérateurs, sous-traitants et travailleurs, ainsi que de leur moyens et devoirs de travailler conjointement pour l’amélioration de la sécurité. Ceci est particulièrement important étant donné que le modèle employeur / employé actuellement défini dans la directive apparaît limité et unidimensionnel, vu la complexité du réseau des parties concernées par les opérations d’extraction minière par forage.  

En modifiant la directive, les définitions / conventions devraient être suffisamment élargies et flexibles afin de s’adapter à toutes les situations organisationnelles et structures réglementaires rencontrées dans les pays de l’UE et de l’EEA.  

*(Voir également Sections 6.1.1.5 et 6.1.2.1 du rapport principal).*

**R9.** La Directive 92/91/EEC devrait définir clairement les structures et / ou fonctions du régulateur  

Durant certains entretiens, il y eut des discussions sur le rôle du régulateur. Il fut remarqué que la directive ne le couvre pas actuellement, alors que la réglementation proposée le fait, ce qui est considérée comme un point positif.  

Le régulateur a un rôle-clé pour s’assurer que les objectifs globaux de la réglementation sont atteints ; or, étant donné que les activités du régulateur ne sont pas pour l’instant définies par la directive, il est important qu’elles le soient dans toute mise à jour. Ceci peut être formulé par des *attentes génériques sur le rôle du régulateur.*  

Des détails de bonne pratique de régulation peuvent être inclus dans tous documents d’orientation. Cela peut couvrir les responsabilités des régulateurs dans la mise en vigueur de leurs réglementations nationales respectives, en particulier dans la réglementation des accidents à risque majeur.  

*(Voir également, par exemple Sections 6.1.1.1 et 6.1.1.4.6 du rapport principal).*

**R10.** La Directive 92/91/EEC devrait inclure une exigence spécifique qui impose aux responsables d’avoir un système de gestion de la sécurité et de la santé pour appliquer les exigences de la directive et encourager l’amélioration en continu.  

L’importance d’avoir un système de gestion, ainsi que le besoin pour qu’il soit clairement défini dans la directive, fut souligné lors de l’analyse d’écart. La Directive 92/91/EEC et la Directive-cadre 89/391/EEC ne comprennent pas actuellement une exigence spécifique pour que les employeurs aient en place un système de gestion de la santé et de la sécurité, alors que beaucoup de leurs devoirs seraient naturellement réalisés par ce système de gestion.  

Il est important de souligner que lors de la mise en vigueur de cette recommandation, le processus devrait également aborder les problèmes spécifiques aux systèmes de gestion identifiés lors de l’analyse d’écart.  

*(Voir également Section 6.1.1.4.1 du rapport principal).*
### Recommandation Discussion

| R11. La Directive 92/91/EEC | L’utilisation des évaluations des risques comme outil est commune à la plupart des pays de l’UE et de l’EEA ; cependant il fut remarqué que l’opportunité d’améliorer la directive, afin qu’elle souligne la nécessité que les évaluations des risques définissent les aspects « critiques à la sécurité » et les attentes en termes de performance (pour protéger les travailleurs) pour garantir un niveau de sécurité acceptable, devrait être saisi.

L’analyse d’écart a souligné que “l’identification et l’analyse des taches critiques à la gestion de la sécurité » étaient importantes. Ceci fut remarqué globalement dans les entretiens en même temps que l’importance d’avoir des rapports sur la santé et la sécurité qui identifient clairement ce qui est « critique » à la sécurité, ainsi que les activités « d’assurance / vérification » nécessaires pour démontrer que ces processus fonctionnent. La démonstration que les organes essentiels à la sécurité fonctionnent conformément aux exigences de la norme permet au régulateur d’être rassurés sur le fait que la sécurité des travailleurs est garantie.

Il fut remarqué que tous les pays ne possédaient pas d’exigences spécifiant le besoin de vérification dans leurs réglementations nationales respectives. Il fut également remarqué que les bonnes pratiques des opérateurs internationaux incluaient la nécessité d’un système de vérification indépendante. Dès lors, lors de la mise à jour de la directive en relation avec cette recommandation, les modifications devraient inclure la nécessité d’avoir un système de « vérification indépendante » ainsi que le niveau d’indépendance attendu (2ème ou tierce partie).

Il est admis que l’Article 6, para 3a de la directive-cadre fait allusion au besoin de s’assurer des résultats du processus d’évaluation des risques.

(Voir également Section 6.1.1.4.5 du rapport principal). |

| R12. La Directive 92/91/EEC | Pendant les entretiens, certaines parties prenantes ont souligné le fait que la directive contient des exigences normatives qui seraient plus appropriées dans des documents d’orientation ou standards, pour les raisons suivantes :

- Cela permet que des approches alternatives et / ou innovantes soient utilisées qui fournissent le même (ou meilleur) niveau de sécurité (bien entendu, cela devrait être démontré à travers des évaluations de risque).
- Les documents d’orientation et les standards peuvent être mis à jour plus rapidement qu’une directive ou qu’une réglementation nationale, à la suite de d’enseignements provenant d’événements, de nouvelles technologies, soulignant tant les insuffisances des présents standards ou documents d’orientation, que mettant en avant des méthodes plus sophistiquées qui devraient être utilisées à l’avenir.

Tous éléments prescriptifs incorporés dans les documents d’orientation doivent être supportés par une base légale ciblée afin de maintenir leur base juridique.

(Voir également Sections 6.1.1.2 et 6.2.2.2 du rapport principal). |
1.5.3 Y-a-t’il d'Autres Actions Nécessaires?

Conclusion de la revue: **Oui**.

En se basant sur les résultats de la revue, DNV a conclu que la CE prendre des mesures, en plus de la modification de la Directive 92/91/EEC, afin d’améliorer son efficacité. Les résultats qui mènent à cette conclusion sont présentés dans la Table 1.4. Les recommandations pour des mesures spécifiques sont détaillées dans la Section 1.5.4.
Table 1.4 Résultats menant à la conclusion que d'autres actions sont nécessaires

<table>
<thead>
<tr>
<th>Conclusion</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Les législations nationales mettant en œuvre les exigences de la directive 92/19/CEE varient à certains égards.</td>
<td>À partir des résultats de la revue, il a été constaté que, bien qu'il y ait beaucoup de points communs, il existe des différences sur les points où la législation est basée sur le risque plutôt que sur la norme, sur la façon dont elle est appliquée, sur les limites de son applicabilité, etc. Certaines de ces différences sont dues aux variations dans la compréhension locale du domaine sur lequel la directive est applicable lors du transfert en législation nationale. S'il existait des conseils / documents d’orientation à l’appui de la directive qui assure la clarté sur ces questions, une plus grande cohérence pourrait être obtenue au fil du temps.</td>
</tr>
</tbody>
</table>

Pour permettre de résoudre ce problème (et d'autres domaines), les parties prenantes ont demandé à la CE de fournir des conseils à l'appui de la directive. | Il faut noter que la directive fixe certes des exigences «minimales», mais il y a des domaines pour lesquels certains pays ont clairement choisi d'étendre l'application de leur législation nationale transposant les dispositions de la directive au-delà de ces exigences. Pour exemple lorsque la législation nationale vise à protéger le public, ainsi que les travailleurs ; les réponses aux sondages révèlent que c’est le cas à Chypre, le Luxembourg, le Portugal, la Slovénie, la Suède, Royaume-Uni et la Norvège. Les exemples précédents sont associés avec des domaines pour lesquels une clarification est nécessaire sur les exigences « minimales ».

Une plus grande clarté est également demandée par les parties prenantes dans d'autres domaines, par exemple les limites du lieu de travail. Ici, il existe des variations sur le domaine pour lequel la législation nationale s’applique. Par exemple, Article 2, paragraphe (b) définit le lieu de travail comme :

«Le lieu de travail désigne l'ensemble des lieux destinés aux postes de travail, associés avec les activités immédiates et auxiliaires ainsi que les installations des industries d’extraction par forage, incluant l’hébergement, dans les cas prévus, auxquels les travailleurs ont accès dans le cadre de leur travail»

Les façons dont ceci a été interprété dans différents pays est illustré dans la Figure 1.1.

Les autres domaines où des intervenants interrogés demandaient des conseils incluaient :

- Clarté sur les limites et les chevauchements entre la directive 92/91/CEE et les autres lois de l'UE. Par exemple, il existe un chevauchement évident entre la directive 92/91/CEE et de la législation proposée.
- Conseils pour aider les régulateurs à mettre en place les systèmes réglementaires et sur ce que sont les bonnes pratiques réglementaires, en ce qui concerne la mise en oeuvre la Directive 92/91/EEC dans leurs pays respectifs.

Au niveau national, fournir des orientations à l’appui de la législation est fréquent, par exemple, le HSE au Royaume-Uni fournit des orientations importantes qui sont disponibles pour l'industrie et les syndicats pour assurer la conformité avec les exigences législatives au Royaume-Uni et garantir la sécurité des travailleurs. Pour les pays ayant des ressources limitées, la provision d’orientations est plus difficile. La CE ne dispose pas actuellement d’orientations qui aident les parties prenantes à se conformer aux exigences de la directive 92/91/CEE.

(Voir également Sections 6.1 et Section 6.2.2.1 du rapport principal).
### Conclusion

Les pays mettant en œuvre la législation nationale pour la première fois ont une courbe d'apprentissage abrupte et souhaitent du soutien.

### Discussion

Ce constat concerne principalement les pays où une nouvelle industrie d’extraction minière débute sur leur territoire (par exemple Chypre, qui a récemment initié une campagne d’exploration pétrolière dans ses eaux territoriales).

C’est également important pour les pays qui changent leur législation et qui doivent s’améliorer dans la mise en œuvre des exigences imposées par la directive étant donné la croissance potentielle d’un secteur de l’extraction minière (par exemple en Irlande où ils ont une industrie d’exploration pétrolière en mer limitée, mais où l’exploration se dirige vers des environnements plus difficiles à l’ouest du pays) ou qui mettent en œuvre une législation basée sur le risque pour la première fois, (par exemple la Roumanie en tant que nouveau membre de l’UE).

Dans ces cas, il existe un manque initial d’expérience et de connaissances dans les législations du secteur de l’extraction minière et / ou basées sur le risque pour les régulateurs, l’industrie locale et les syndicats, (à noter que les entreprises internationales ont tendance à apporter une expertise de l’étranger).

Les parties prenantes ont exprimé le désir d’un appui de la CE afin de permettre aux pays où ces besoins se font sentir d’apprendre des autres pays ayant une industrie plus mature et une plus grande expérience avec la directive. (Voir également Sections 6.1.3.2, 6.2.1.2 et 6.2.2.1 du rapport principal).

La protection des travailleurs bénéficierait de l’apprentissage et du partage d’expérience entre les pays de l’UE et de l’EEE.

Les parties prenantes estiment qu’il existe un avantage dans l’existence d’un plus grand partage de l’apprentissage et de l’expérience entre les pays de l’UE et de l’EEE. Cela a été perçu comme aidant:

- Les pays montant la courbe d’apprentissage (voir le constat précédent).
- Une mise en œuvre plus rapide des actions entre les pays de l’UE et de l’EEE pour mieux protéger la sécurité des travailleurs dans cette industrie, basée sur l'apprentissage par l'expérience, y compris, par exemple, des:
  - Accidents et les accidents évités de justesse
  - Initiatives
  - Mises en œuvre de nouvelles orientations, normes, etc
  - Pratiques réglementaires

(Voir également Sections 6.2.1.2 et 6.2.2.1 du rapport principal).
Figure 1.1 «Lieu de travail / étendue géographique» couverts par la législation nationale qui met en œuvre les exigences de la directive 91/92/EEC pour l’extraction minière en mer par le forage
1.5.4 Question 4 - Quelles Actions Devraient Etre Mises en Place Afin d’Améliorer l’Efficacité de la Directive?

Des recommandations spécifiques pour les actions pour améliorer l’efficacité de la directive sont présentées dans la Table 1.5, ainsi que les résultats de la revue qui les ont entrainées.

Table 1.5 Recommandations pour les actions qui doivent être entreprises pour améliorer l’efficacité de la directive

<table>
<thead>
<tr>
<th>Recommandation</th>
<th>Discussion</th>
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</thead>
<tbody>
<tr>
<td>R13. La commission doit développer des documents d’orientation pour soutenir la directive qui:</td>
<td>Comme il en a été question dans la Section 1.5.3, il existe une demande de la part des parties prenantes pour que la CE fournisse des documents d’orientation à l’appui de la Directive 92/91/EEC. D’autres directives européennes (directive 2002/49/CE sur le bruit ambiant, par exemple) contiennent des dispositions qui encouragent la Commission à élaborer des lignes de conduite (dans certains domaines) et qui contribuent à faciliter la réalisation des objectifs de la loi; donc il existe un précédent pour le faire dans le contexte de la directive. Il est reconnu que cette approche est plus fréquente chez les directives sectorielles par opposition à celles prévues sous le cadre de la santé et de la sécurité au travail de l’UE.</td>
</tr>
<tr>
<td>a. Clarifient le champ d’application de la Directive 92/91/EEC, en particulier;</td>
<td>Il est à noter qu’une implication de la clarification de l’orientation est que certains pays de l’EEE et de l’UE peuvent avoir besoin d’ajuster la portée de leur législation nationale qui met en œuvre les exigences de la directive 92/91/CEE directive à des domaines non couverts actuellement par leur législation.</td>
</tr>
<tr>
<td>i. Affirmant que tous les risques pour les personnes doivent être traités, et définissant la &quot;Santé et sécurité au travail&quot; et les &quot;accidents majeurs&quot;</td>
<td>D’après les conclusions de la revue, il est clair que la directive est perçue comme couvrant tous les risques. Avec une mise à jour de la directive donnant des exigences pour la gestion de la &quot;Santé et sécurité au travail&quot; et des &quot;accidents majeurs&quot; plus explicites (voir la Recommandation R6), il est convenu qu’une méthodologie pour définir ces types de risques et pour s’assurer que tous dangers touchant les travailleurs sont pris en compte, pourrait être utile à ceux qui sont responsables d’interpréter la directive et ses exigences. (Voir également Section 6.1.1.3.2 du rapport principal).</td>
</tr>
<tr>
<td>ii. Les types d’extraction minière par le forage qui sont traités</td>
<td>Ceci devrait aborder les domaines où cette étude a identifié les différences dans les types d’extraction minière couverts par la législation nationale qui met en œuvre les exigences de la directive 92/91/EEC. L’orientation devrait répondre à des questions telles que : “Toutes les activités de forage sont-elles comprises?”; “L’eau est-elle un minéral?”; “Qu’en est-il du forage géo-thermique?”; “Extraire une carotte d’échantillon est-il considéré comme une activité d’extraction minière?”. Il est recommandé que le champ d’application soit clarifié pour les types de forage ou les personnes associées à l’activité de forage / production du puits sont confrontées à une risque due à la substance (minérale ou autre, par exemple eau ou CO₂) qui est extraite / stockée ou par d’autres substances qui pourraient être rencontrées. (Voir également Section 6.1.1.3.3 du rapport principal).</td>
</tr>
<tr>
<td>iii. Les phases du cycle de vie de l’extraction minière par le forage qui sont abordées</td>
<td>Il existe des différences sur la façon selon laquelle les étapes du cycle de vie d’extraction minière par le forage sont couvertes par la législation nationale mettant en œuvre les exigences de la directive dans les pays de l’UE et de l’EEE. Le forage d’exploration et de production sont soit disant couverts dans tous les pays de l’UE et de l’EEE, cependant les activités sismiques, la construction / le démantèlement / abandon du site peuvent ne pas être couverts. (Voir également Section 6.1.1.3.4 du rapport principal).</td>
</tr>
</tbody>
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### Recommandation | Discussion
--- | ---
iv. Les **biens** qui sont compris (et, pour ceux qui ne sont pas compris, quelle est la directive à appliquer) | Il s’agit de l’interprétation du lieu de travail pour l’extraction minière par le forage, comme il en a été discuté dans la section 1.5.3 et illustrée par la figure Figure 1.1. L’orientation devrait répondre à des questions telles que : « Est-ce que les pipelines associés avec une installation sont couverts ? » et « Est-ce qu’une installation gazière située à des kilomètres du site d’extraction est couverte ? ».

Là où la nouvelle méthodologie délivrée en réponse à cette recommandation définit un lieu de travail comme n’étant pas couvert par la directive 92/91/CEE, le protocole devrait aller jusqu’à identifier les directives de sécurité au travail qui s’appliquent à ce lieu de travail.

(Voir également Section 6.1.1.3.6 du rapport principal).

v. Ce qui est considéré comme le **lieu de travail** sous la Directive | Clarifier l’orientation dans ce domaine est plus important pour l’extraction minière par forage en mer que sur terre. À partir de la revue, il a été constaté qu’il existe des différences entre les pays lorsqu’un travailleur entre dans le lieu de travail. Par exemple, pour un travailleur qui travaille sur une plate-forme en mer et qui s’y rend en hélicoptère, dans certains pays, le lieu de travail pour lequel la législation nationale mettant en œuvre les exigences de la directive 92/91/CEE est censée s’appliquer là où commence l’enregistrement au niveau de la piste de décollage a l’héliport et couvre le voyage en hélicoptère, alors que dans d'autres pays elle commence à l’arrivée à la plate-forme en mer.

Il est à noter que pour les installations sur terre, le lieu de travail est clairement identifié par les limites du site.

(Voir également Sections 6.1.1.3.4 et 6.1.1.3.6 du rapport principal)

b. **Assister les régulateurs:** | Le Comité Supérieur des Inspecteurs du Travail (SLIC) et le Groupe Des Autorités Pétrolières en Mer de l’UE peuvent jouer un rôle-clé à cet égard.

i. Sur ce qui doit être fait pour **mettre en place et opérer un système législatif** qui permette d’administrer la législation nationale qui applique les exigences de la directive. | Comme il en a été question dans la Section 1.5.3, les parties prenantes novices dans l’industrie d’extraction minière par le forage ou dans les régimes réglementaires basés sur le risque ont exprimé le désir d’obtenir de l’assistance pour les aider à grimper la courbe d’apprentissage. Avoir des orientations dans ce domaine serait bénéfique. Cela pourrait inclure une feuille de route de mise en œuvre et de conseils sur les bonnes pratiques (par exemple pour un régulateur, cela pourrait expliquer la façon de concevoir et de structurer les inspections sur la base des risques).

(Voir également, par exemple Sections 6.1.2.2, 6.1.3.1 et 6.2.2.1 du rapport principal).

ii. À accomplir leur rôle, et à mettre en place des activités qui supportent la **construction d’une bonne culture de sécurité et qui encouragent une amélioration en continu.** | Au cours des entretiens, il y a eu des discussions importantes sur les activités qui encouragent la Sécurité au-delà des exigences de la législation. Les pays qui ont une industrie d’extraction minière par le forage mature ont présenté une liste d’activités qu’ils entretiennent en soutien de cet objectif spécifique. Si la CE rassemblait ces exemples de bonnes pratiques pour les partager avec les régulateurs, cela serait bénéfique.

Il y a 2 éléments clés qui furent mentionnés par les parties prenantes, comme étant importants dans le développement d’une bonne culture de la Sécurité et conduisant à une performance accrue. Ainsi, cette orientation devrait aborder la collaboration des parties prenantes (régulateurs, industrie, syndicats) et le besoin d’avoir un processus d’amélioration en continu (par exemple mettre en place un cycle planifier-faire-vérifier-agir en conséquence) pour mesurer et contrôler la performance en termes de sécurité de l’industrie.

(Voir également Sections 6.1.1.2, 6.1.1.4, 6.1.3.1, 6.1.3.3, 6.2.1.2, and 6.2.2.1 du rapport principal).
### Recommandation Discussion

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| **c.** Définir les informations qui devraient être mises à la disposition du régulateur afin qu’il puisse accomplir son rôle. | La revue a illustré le fait qu’il existe des variations sur les documents et informations qui sont rendues disponibles ainsi sur quelles bases et fréquences, entre les pays de l’UE et de l’EEA. Des indications sur les types d'informations que l'industrie peut fournir aux organismes de réglementation et en quoi cela les aide à augmenter leur confiance, serait bénéfique.  
(Voir également Sections 6.1.2.1 et 6.1.1.4.6 du rapport principal) |
| **d.** Définir clairement les termes employés, par exemple “l'employeur”. | Cette recommandation vient de la constatation qu’il existe différentes interprétations de la directive dans sa transposition dans la législation nationale. Avoir une bonne définition des termes employés permettra d’augmenter les points communs entre les pays de l’UE et de l’EEA.  
(Voir également Section 6.1.1.5 du rapport principal). |
| **e.** Décrire les interfaces entre la directive et les autres directives / lois | En premier lieu, les parties prenantes ont soulevé la question de savoir comment la Directive 92/91/EEC chevauche la réglementation proposée sur la Sécurité dans l’industrie pétrolière en mer. En outre, elles ont souligné la nécessité de comprendre les limites et chevauchements des directives qui traitent de leur industrie. Une orientation sur ces sujets serait bénéfique.  
Une telle orientation devrait également expliquer comment les directives fonctionnent ensemble dans le cas où il y a des chevauchements. Cela revêt une importance particulière pour la directive 92/91/CEE et la législation proposée pour le l’industrie pétrolière en mer.  
(Voir également Sections 6.1.1.3.2, 6.2.1.2 et 6.2.2.2 du rapport principal). |
**Recommandation** | **Discussion**
---|---
f. Expliquer le processus de l’identification des risques jusqu’à l’assurance que les risques sont gérés de façon adéquate (y compris l’importance de l’identification des éléments critiques à la sécurité) | Dans les pays qui ont une industrie pétrolière mature, et qui ont adopté un cadre réglementaire basé principalement sur le risque, les parties prenantes étaient familières avec le processus de l’identification des risques jusqu’à l’assurance que les risques sont gérés de façon adéquate. Ces pays, en général, avaient une vision globale du processus d’identification ce qui est critique pour la gestion des risques associés à l’activité d’extraction minière par le forage, en prenant en compte les équipements, les systèmes et procédés, ainsi que la culture et les compétences (installation - procédé - personnel). Dans ces pays, les exigences d’assurance prennent en conséquence une perspective d’ensemble.

Dans les pays moins expérimentés, ou bien ceux qui sont novices dans la réglementation basée sur le risque, la compréhension de ce processus pour fournir l’assurance sur les aspects critiques à la gestion des risques, pourrait être améliorée. Cela aiderait à offrir une protection aux travailleurs en permettant, non seulement d’assurer la bonne évaluation des risques, mais aussi d’assurer la vérification et l’inspection axée sur le large éventail d’aspects (installation - processus - personnel) qui sont essentiels à la gestion des risques. Ce qui va au-delà d’une inspection physique du matériel.

D’après les entrevues, l’importance de l’évaluation des risques pour déterminer ce qui est «essentiel à la sécurité» a également été soulignée. Il a été dit que ce sont ces aspects, (tâches, équipements, compétences, etc) que le document de sécurité et de santé doit clairement identifier, et que les activités « d’assurance » / « vérification » fonctionnaient comme convenu. La démonstration que ces organes essentiels à la sécurité fonctionnent comme convenu permettent au régulateur d’avoir confiance en ce que la sécurité des travailleurs est garantie.

Il est à noter que cet objectif est atteint dans une certaine mesure dans le document de la commission «Lignes directrices sur l’évaluation des risques au travail» (CE, 1996) développé en soutien de la directive-cadre (directive 89/391/CEE).

(voir également Section 6.1.1.4.1, 6.1.1.4.2, 6.1.1.4.4 et 6.1.1.4.5 du rapport principal).
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| g. Présenter les bonnes pratiques d’engagement de la main d'œuvre.            | Il existe différentes approches pour engager la main-d'œuvre en matière de sécurité, tant au niveau de l'installation qu'au niveau national.  
|                                                                                | Parmi celles-ci, cela devrait inclure une orientation sur les bonnes pratiques sur le rôle et les responsabilités des représentants sécurité.  
|                                                                                | Un représentant de la sécurité peut représenter la main-d'œuvre pour la sécurité sur une base à temps plein, ou bien en avoir la responsabilité, tout en effectuant leur travail normal, ou bien représenter les travailleurs sur toutes les questions. Ce qui était clair à la suite des entrevues était que :  
|                                                                                | • Lorsque le représentant a aussi une journée de travail normale, il peut trouver difficile d'être aussi actif sur la sécurité que certains intervenants le souhaitent. Des exemples ont été donnés, où ils avaient besoin de suivre une formation pour le rôle alors qu’ils étaient en congé.  
|                                                                                | • Lorsque la représentation de la sécurité fait partie du rôle de la représentation des travailleurs pour une personne, il a été dit que la sécurité figurait moins dans la liste des priorités que, par exemple, le salaire et les conditions de travail.  
|                                                                                | Il y a d'autres défis pour l'environnement en mer où les rythmes de travail (par exemple, les rotations toutes les 12, ou bien les rotations 2 semaines en mer – 2 semaines en congé) rendent également difficile l’assistance et la participation des représentants de la sécurité de façon continue.  
|                                                                                | Étant donné les différences, il serait bon que la Commission élabore des orientations sur les bonnes pratiques d'engagement (y compris des orientations sur les bonnes pratiques concernant le rôle et les responsabilités des représentants de la sécurité en s'appuyant sur les objectifs énoncés dans les articles 10 et 11 de la directive 89/391/CEE). (Voir également Section 6.1.3.3 du rapport principal).  
| R14. La Commission devrait organiser des consultations internes avec les individus responsables de la protection du grand public afin de déterminer s'il y a besoin d'une orientation sur la pertinence pour chaque pays d’étendre le champ d’application de la législation nationale au grand public. | La protection du grand public est clairement en dehors du champ d’application de la directive 92/91/CEE. Il est également clair que le grand public est exposé à des risques associés avec l'extraction minière à travers des activités de forage. Cela a été illustré lors des entrevues avec les intervenants allemands quand ils ont discuté des risques associés avec les pipelines transportant du gaz contenant du H2S entre les puits terrestres et les usines de transformation du gaz.  
|                                                                                | Les réponses de certains pays indiquent qu'ils ont étendu la portée de leur législation mettant en œuvre les exigences de la directive 92/91/CEE pour inclure la protection du grand public (ainsi que des travailleurs), voir Figure 1.2.  
|                                                                                | Compte tenu de ce qui précède, il est recommandé que la Commission doive tenir des consultations internes avec les responsables de la protection du grand public. Ces responsables devraient déterminer, selon les pays, s’il est pertinent d’étendre le champ d’application de la ligne de conduite au niveau de la législation nationale afin de couvrir le grand public et que cela devrait prendre en considération non seulement l'emplacement du puits, mais aussi les installations associées couvertes par la directive. (Voir également Section 6.1.1.3 du rapport principal). |
La Commission devrait étudier quel rôle supplémentaire elle pourrait prendre et comment elle peut collaborer avec les parties prenantes afin de se mettre d'accord sur les orientations, pratiques et standards à utiliser à travers les pays de l'UE et de l'EEA.

<table>
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<td>R15.</td>
<td>Il existe des orientations qui sont disponibles à l’industrie. La source et le niveau des orientations varient selon les pays, voir la Figure 1.3. Une question soulevée lors des entretiens était que les «normes et pratiques» promues par les régulateurs dans les pays de l’UE et de l’EEA varient, et les chevauchements dans les normes approuvées par les régulateurs entre les pays restent limités. Pour l’industrie, démontrer la conformité avec les dispositions législatives nationales (y compris celles découlant de la directive) dans les différents pays de la CE et de l’EEA implique souvent de répondre aux exigences de pratiques définies et de normes techniques (par exemple BS, Norsok, OGP, etc.). Le principal avantage de l'utilisation de normes techniques est qu'elles peuvent être révisées et améliorées (en se basant sur l'apprentissage / expérience) plus rapidement que les législations nationales. À la suite des entrevues, il a été souligné que les normes techniques adoptées varient selon les pays et que cette situation peut aboutir à des obstacles / inefficacités pour qu’elles fonctionnent à travers les frontières. La directive (dans sa forme actuelle) ne fait pas référence aux livrets de méthodes, tant pratiques que liées aux normes techniques pour l'utilisation dans les industries extractives minières. Bien qu’il soit évident qu’il existe des raisons spécifiques pour lesquelles les pratiques et les normes qui s'appliquent varient (par exemple les différences dans la géographie et donc le profil de risque; environnements arctiques plutôt que méditerranéens), développer une plus grande cohérence (c’est-à-dire harmonie) sur les orientations, les pratiques et les normes techniques utilisées se fait par l'UE et de l'EEA permettrait d’équilibrer les environnements réglementaires et d’ aider l’industrie à se conformer aux exigences. De plus cela permettra aux entreprises de fonctionner plus facilement à travers les frontières de l'UE et de pays de l’EEA. La Commission pourrait jouer un rôle dans la collaboration avec les parties prenantes pour agréer les normes techniques à utiliser dans les pays de l'UE et de l'EEA, au moins pour un noyau de normes. La Commission soutenant / facilitant le développement de normes techniques harmonisées n'est pas sans précédent. Elle le fait actuellement et un certain nombre de normes harmonisées (CE, 2012b) ont été développées et sont actuellement utilisées dans un certain nombre de secteurs économiques / produits; aucun d'entre eux qui concernent spécifiquement les industries d’extraction minière[3]. L'utilisation de normes harmonisées (comme les normes harmonisées de l'UE [4] en vertu de la Directive Machines 206/42/EC) augmenterait l'efficacité du travail des opérateurs / compagnies travaillant dans plus d'un pays. Cela aidera également à développer et à assurer l'uniformité des pratiques de travail de l'ensemble de l’UE et de l'EEA. Le Groupe de coopération administrative des machineries (ADCO) et le groupe d’intérêt de la directive Machinerie de l’UE et le Comité consultatif de l’UE sur la la normalisation de la sécurité et de la santé pourraient contribuer à cette recommandation. (Also see Section 6.1.1.2, 6.1.3.1 et 6.2.1.2 du rapport principal).</td>
</tr>
</tbody>
</table>

[3] Il est à noter qu’il existe une norme européenne harmonisée pour les équipements sous pression et cela s’appliquera à tous les équipements sous pression utilisés dans les industries d’extraction minière.
### Recommandation 16 (R16)

**La Commission devrait étudier la possibilité de mettre en place des forums d'engagement pour l'apprentissage et une boucle d'amélioration en continu qui soutient l'entretien et l'amélioration des documents qui supportent la directive, y compris:**

- **b. Documents d'orientation.**
- **c. Standards.**

**Discussion**

Lors de la revue, il a été soulagé par les parties prenantes qu’avoir une boucle d'amélioration continue en place pour maintenir et mettre à jour tous les aspects de leur environnement législatif national était un aspect clé de la réussite pour garantir la sécurité des travailleurs dans l'industrie.

En outre, il est clair que les mises à jour des orientations et des normes peuvent être réalisées plus rapidement que la mise à jour de la législation.

Les boucles d'amélioration en continu (systèmes et procédés) peuvent assurer que l’orientation et les normes sont mises à jour rapidement afin de refléter l'apprentissage par l'expérience et les accidents. Cela devrait inclure des forums d'engagement en développement entre les principales parties prenantes (organismes de réglementation, l'industrie et les syndicats) où l'apprentissage (par exemple, des accidents, inspections, etc) est partagé et utilisé comme entrée pour les activités d’amélioration en continu. Il est à noter que ceci a déjà débuté pour un groupe d'intervenants (organismes de réglementation) avec la création récente du Groupe d'Autorités Pétrolières en Mer (UE, 2012) (Voir également Sections 6.1.1.2, 6.1.2.2, 6.1.3.2, 6.1.3.3, 6.1.2.1 et 6.2.1 du rapport principal).

### Recommandation 17 (R17)

**La Commission devrait étudier quel rôle elle pourrait servir et comment elle pourrait soutenir les régulateurs dans une première phase d’application de leur législation nationale pour les exigences de la Directive 92/91/EEC afin de les aider à construire les capacités et expériences nécessaires pour réguler efficacement l’industrie.**

**Discussion**

D’après la revue, il a été constaté que là où il existe une importante industrie, les régulateurs disposent de ressources importantes pour développer / mettre à jour, déployer, soutenir et appliquer la législation qui met en œuvre les exigences de la directive 92/91/CEE de leur pays.

Pour les pays avec une industrie pétrolière nouvelle / limitée, il a été constaté que leurs ressources réglementaires et leur connaissance de l’industrie, de ses risques et de la façon de gérer les risques sont plus restreintes. Dans ces pays, les régulateurs souhaiteraient obtenir un soutien pour renforcer leurs capacités. Le même besoin de renforcer leurs capacités a également été exprimé pour les des pays qui passent à une législation basée sur le risque.

Il est considéré comme important que les régulateurs doivent construire et avoic les capacités de réussir à réglementer l'industrie, et ce afin d'assurer la sécurité des travailleurs.

Pour ceux qui ont besoin de renforcer leurs capacités, le soutien de la Commission pour renforcer les capacités de telle sorte qu'ils peuvent durablement et avec succès respecter les exigences de la directive 92/91/CEE serait bénéfique.

(Voir également Section 6.1.1.2, 6.1.2.2 et 6.2.1.2 du rapport principal).
Figure 1.2 “Qui est protégé” par la législation nationale qui met en œuvre les exigences de la directive 91/92/EEC par groupes de population
Figure 1.3 Disponibilité d'orientation pour aider l'industrie à se conformer à la législation nationale d'application des exigences de la directive 92/91/CEE
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ARBEITSPLATZ IN DER GEWINNUNG VON
BODENSCHÄTZEN DURCH BOHRUNGEN
DET NORSKE VERITAS
Bericht für die Europäische Kommission
Die Analyse und Evaluierung der Auswirkungen der praktischen Anwendung von nationalen Gesetzgebungen in Zusammenhang von Sicherheit und Gesundheit am Arbeitsplatz in der Gewinnung von Bodenschätzen durch Bohrungen

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0 - Entwurf 29. Oktober 2012 Für die Überprüfung durch die Ad Hoc Arbeitsgruppe der Europäischen Kommission Mark Boult, Associate Director Kehinde Shaba, Senior Consultant John Spouge, Principal Consultant Julian Douse, Principal Consultant Hari Vamadevan Regional Manager
0.1 - Entgültiger Entwurf 9. Januar 2013 Für die Überprüfung durch die Ad Hoc Arbeitsgruppe der Europäischen Kommission Mark Boult, Associate Director Kehinde Shaba, Senior Consultant John Spouge, Principal Consultant Julian Douse, Principal Consultant Hari Vamadevan Regional Manager
1 - Endg. Bericht 15. Februar 2013 Für die Überprüfung durch die Ad Hoc Arbeitsgruppe der Europäischen Kommission Mark Boult, Associate Director Kehinde Shaba, Senior Consultant Julian Douse, Principal Consultant Hari Vamadevan Regional Manager

Es ist untersagt, Teile dieses Dokumentes zu zitieren, welche zur Fehlinterpretation führen könnten.
Diese Seite ist absichtlich leer gelassen worden.
1 EXEKUTIVE ZUSAMMENFASSUNG

1.1 Hintergrund

Die Europäische Union (EU) versucht a) die Sicherheit und Gesundheit von Arbeitnehmern zu schützen und b) Verbesserungen im Arbeitsumfeld in all Ihren Mitgliedsstaaten zu sichern. Sie versucht dies zu erreichen, indem sie Richtlinien erlässt, die alle Aktivitäten im Zusammenhang von Gesundheit und Sicherheit am Arbeitsplatz regeln (und damit auch den Schutz von Arbeitnehmern). Die Autorität, diese Richtlinien zu diesem Thema aufzuführen und durchzusetzen, stammt von Artikel 153 des Vertrags über die Arbeitsweise der Europäischen Union.


Die folgenden Aspekte haben zur Bewertung geführt:

- Der Beitritt von zusätzlichen Mitgliedsstaaten in die EU seit der letzten Bewertung.
- Öl- und Gas-Bohrungen und Produktion in:
  - Anspruchsvolleren und komplexeren Umgebungen (z.B. Westlich der Shetlandinseln und in der Arktis).
Erhöhte Wahrnehmung der Risiken, die mit Öl- und Gas-Bohrungen verbunden sind, seit des Deepwater Horizon Unfalls.

Die vorgeschlagene Gesetzgebung\textsuperscript{1} aus der EG zur Abdeckung schwerer Unfälle in der Offshore Öl- und Gas-Prospektion, Exploration und Produktion

\textbf{1.2 Ziele}

Die Hauptziele dieser Bewertung sind wie folgt:


7. Die Vorbereitung des analytischen Dokumentes für die Soziale Partner Beratung zu unterstützen, die gebraucht wird, falls Änderungen zur Direktive vorgesehen sind (falls notwendig).

\textbf{1.3 Umfang der Bewertung}

Der Umfang der Bewertung erfasst die Sicherheit und Gesundheit am Arbeitsplatz in der Gewinnung von Bodenschätzen durch die Bohrindustrie in EU Mitgliedsstaaten und EEA Ländern.

Vorschriften verlangen vom Bericht, Folgendes zu identifizieren, analysieren und zu beurteilen:

\begin{itemize}
  \item a. Die spezifischen Vorbeugungsmaßnahmen, die von Mitgliedsstaaten, Unternehmen und Einrichtungen des Öffentlichen Dienstes angewendet werden, z.B. organisatorische Maßnahmen.
  \item b. Das Gleichgewicht zwischen regulatorischer Aufmerksamkeit, der Hauptgefahrenkontrollmaßnahmen gewidmet werden, gegenüber herkömmlichen Arbeits- und Gesundheitsschutzsystemen.
\end{itemize}

\textsuperscript{1} \textit{Vorschlag für eine Verordnung des Europäischen Parlaments und des Rates über die Sicherheit von Offshore Erdöl- und Erdgas-Prospektion, Exploration und Produktion ”}(EC, 2012a).
c. Die Auswirkungen dieser spezifischen Vermeidungsansätze auf allen Ebenen des Arbeits- und Gesundheitsschutzes am Arbeitsplatz.

d. Die Schwierigkeiten und positiven Effekte, die Unternehmen und Einrichtungen des Öffentlichen Dienstes im Zusammenhang mit der praktischen Anwendung der Gesetzgebung von Sicherheit und Gesundheit am Arbeitsplatz erfahren.

e. Jegliche unerwartete negative oder positive Nebeneffekte, die durch die praktische Anwendung der Gesetzgebung von Sicherheit und Gesundheit am Arbeitsplatz entstehen.

In allen Fällen sind die Auswirkungen auf kleine und mittelgroße Unternehmen sowie Selbständige zu berücksichtigen. Außerdem ist es erforderlich, dass die Analyse die Hauptunterschiede zwischen den 27 Mitgliedsstaaten hervorhebt und die möglichen Konsequenzen für die Sicherheit von Offshore-Aktivitäten innerhalb ganz Europas untersucht.

1.4 Ansatz
Um die Arbeit zu strukturieren und einen systematischen Ansatz zu fördern wurde damit begonnen, die Ziele in eine Liste von Fragen zu transformieren, die sich an eine Reihe von Hauptthemen anlehnen. Diese Hauptthemen waren:

- **Hintergrund / Kontextinformationen** (aktueller / zukünftiger Umfang der Tätigkeit, historische Trends etc.).
- **Angewandte regulatorische Ansätze in der EU und in EEA Ländern.**
- **Umfang der nationalen Gesetzgebung.**
- **Anforderungen, Verfahren und Durchsetzung.**
- **Effektivität / Auswertung.**
- **Zukünftige Erwägungen.**

Die Studie beantwortete dann diese Fragen durch folgende Methoden:

- **Abweichungsanalyse** der Direktive gegenüber den Resultaten von ausgewählten schweren Unfällen.
- **Semistrukturierte Gespräche** mit Teilhabern in ausgewählten Ländern.
- **Umfrage mit** einer großen Gruppe von Teilhabern in allen relevanten Ländern.
- **Analyse von Industrie Tätigkeiten und ihrer Sicherheitsleistung** basierend auf öffentlich erhältlichen Daten und aus Gesprächen und Umfragen erhaltene Informationen, um einen einfachen Überblick über die Gewinnung von Bodenschätzen durch Bohrungen in EU und EEA Ländern zu erhalten.
- **Zusammenfassung** der Befunde der oben genannten Aktivitäten.
1.5 Diskussionen und Empfehlungen

Ein breites Spektrum an Erkenntnissen in Bezug auf die Richtlinie wurde im Rahmen dieser Arbeit identifiziert. Dies umfasst Aspekte wie:

- Welche Änderungen in der Richtlinie erforderlich sind.
- Wie und wo sollten solche Änderungen erfolgen (d.h. sollten sie innerhalb der Richtlinie stattfinden oder in den Dokumenten zur Unterstützung der Richtlinie, z.B. durch zusätzlichen erklärenden Text).
- Vorschläge, wie diese Änderungen vorgenommen werden sollten sowie die Rollen, die bestimmte Parteien / Interessegruppen im Änderungsprozess übernehmen können.

Um der Gesamtleistung dieser Arbeit Priorität / Bedeutung zu geben, sind die Ergebnisse, Schlussfolgerungen und Empfehlungen im Zusammenhang und mit Berücksichtigung der grundlegenden Fragen vorgestellt, da diese als Kombination im Kern dieser Bewertung liegen:

- Frage 1 – Sind Änderungen in der Richtlinie notwendig? (Beantwortet im Abschnitt 1.5.1).
  - Frage 2 – Sollte dem so sein, welche Änderungen in der Richtlinie sind erforderlich? (Beantwortet im Abschnitt 1.5.2).
- Frage 3 – Sind andere Maßnahmen erforderlich, um die Effizienz der Richtlinie zu verbessern? (Beantwortet im Abschnitt 1.5.3).
  - Frage 4 – Sollte dem so sein, welche anderen Maßnahmen sollten ergriffen werden, um die Wirksamkeit der Richtlinie zu erhöhen? (Beantwortet im Abschnitt 1.5.4).

1.5.1 Frage 1 – Sind Änderungen in der Richtlinie notwendig?

Fazit aus der Bewertung: Ja.


Tabelle 1.1: Hauptrende, die zu dem Schluss führen, dass Änderungen an der Richtlinie erforderlich sind

<table>
<thead>
<tr>
<th>Befund</th>
<th>Diskussion</th>
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<tbody>
<tr>
<td>Anteilhaber in Ländern, in denen die Richtlinie von größter Bedeutung ist, um die Sicherheit der Arbeitnehmer aufgrund der inhärenten Risiken in der Gewinnung von Bodenschätzen durch die Bohrindustrie zu geschützen, haben ausdrücklich erklärt, dass sie die Richtlinie geändert haben möchten; d.h. eine Aktualisierung der Richtlinie ist als Insbesondere unter Anteilhabern in Ländern mit Offshore Öl- und Gas-Exploration und Produktion (70%) ist die Mehrheit der Ansicht, dass die Richtlinie geändert werden sollte. Die EC möchte sicherstellen, dass Arbeitnehmer in der Offshore Öl- und Gasindustrie geschützt sind. Dies ist eindeutig in deren Anfrage, diesen Bericht auf diese Industrie zu fokussieren, als auch in deren vorgeschlagener Gesetzgebung für diese Branche bewiesen. Da die Risiken, die mit Offshore Öl-und Gasförderung (z.B. Blow-Out, raue und abgelegene Orte, Tiefseebohrungen, Potenzial für signifikante Umweltbelastung etc.) verbunden sind, wahrscheinlich die bedeutendsten aller Mineraliengewinnungsaktivitäten sind, ist diese Position verständlich. DNV stellt fest, dass Länder ohne Öl- und Gasindustrie (hohes Risiko von Mineralien durch</td>
<td></td>
</tr>
<tr>
<td>Befund</td>
<td>Diskussion</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>schweren Unfällen betroffenen Mineraliengewinnungsindustrie gesehen.</td>
<td></td>
</tr>
<tr>
<td>Die aktuelle, gängige Praxis der Industrie- und Aufsichtsbehörden</td>
<td>Die aktuelle, gängige Praxis der Industrie- und Aufsichtsbehörden ist heutzutage deutlich anders als es 1992 der Fall war (das Jahr, in dem die Richtlinie eingeführt wurde.)</td>
</tr>
<tr>
<td>der Richtlinie wiedergegeben.</td>
<td></td>
</tr>
<tr>
<td>Trotzdem konnten Bereiche in der Richtlinie identifiziert werden, die verbessert werden können. Vorschläge für Änderungen sind unter der Frage “...welche Änderungen zur Richtlinie sind notwendig?” aufgelistet und diskutiert.</td>
<td></td>
</tr>
<tr>
<td>(Auch in Abschnitten 6.2.1.2 und 6.2.2.2 beschrieben).</td>
<td></td>
</tr>
</tbody>
</table>
### Befund

<table>
<thead>
<tr>
<th>Verschiedene spezifische Bereiche in der Richtlinie selbst (als Ganzes) oder mit besonderen Bestimmungen wurden (bei der Bewertung) als begrenzend identifiziert. Die Einschränkungen könnten sich negativ auf ihre Fähigkeit, den Schutz der Arbeitnehmer zu unterstützen, auswirken.</th>
</tr>
</thead>
</table>

### Diskussion

<table>
<thead>
<tr>
<th>Während die zentralen Gestaltungsselemente / Eigenschaften der Richtlinie, im Genaueren der Zielsetzungsansatz, die Forderung nach einer Gefährdungsbeurteilung und die Notwendigkeit zur Berücksichtigung technologischer Fortschritte, sicherstellen, dass die Richtlinie über eine breite Anwendbarkeitsbreite verfügt, das eine breite Palette von Risikoarten, Aktivitäten und Situationen deckt (wodurch es insgesamt recht robust ist), wurden bestimmte Bereiche von den Anteilhabern als verbesserungsbedürftig / weiter ausbaubar identifiziert. Beispiele sind:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Die Anforderungen für die Kontrolle von Gefahren während des Bohrens wurden als begrenzt angesehen.</td>
</tr>
<tr>
<td>• Die Richtlinie wird als stärker auf Arbeits- und Gesundheitsschutz bezogen gesehen, mit weniger Fokus auf Hauptgefahren und Groß-Unfälle.</td>
</tr>
<tr>
<td>• Verbesserte Klarheit über den Umfang und die Anwendungsbereiche der Richtlinie, insbesondere im Hinblick auf:</td>
</tr>
<tr>
<td>o Welche Arten von Bodenschutzgewinnung abgedeckt sind</td>
</tr>
<tr>
<td>o Für welche Stufen im Mineraliengewinnungszyklus sie gelten soll</td>
</tr>
<tr>
<td>o Die geographische Ausdehnung / Grenzen der Gewinnung von Bodenschätzen, in dem die Richtlinie gelten soll (z.B. Offshore-Anlagen, Leitungen und angeschlossene Einrichtungen).</td>
</tr>
<tr>
<td>• Verbesserte Übersichtlichkeit der wichtigsten Konzepte, die in der Richtlinie verwendet werden (z. B. der &quot;Arbeitgeber&quot; und wie es sich auf das Netz der Akteure bezieht).</td>
</tr>
<tr>
<td>• Eng mit Obenstehendem verbunden ist die Notwendigkeit für mehr Klarheit über die Rollen und Verantwortlichkeiten der beteiligten Parteien.</td>
</tr>
<tr>
<td>• Der Mangel einer spezifischen Anforderung an die Verantwortlichen, ein Sicherheitsmanagementsystem zu haben.</td>
</tr>
</tbody>
</table>

(Auch in Abschnitten 6.2.2.2, 6.1.1.4.1, 6.1.1.5 und 6.1.2.1 beschrieben).

<table>
<thead>
<tr>
<th>Die Direktive und die vorgeschlagene Gesetzgebung müssen zusammenarbeiten.</th>
</tr>
</thead>
</table>

|---|


Es wurde auch festgestellt, dass es viele Aspekte in der vorgeschlagenen Rechtsvorschrift gibt, die sinnvollerweise in die Richtlinie aufgenommen werden sollten. |

(Auch im Abschnitt 6.2.2.2 beschrieben).

### 1.5.2 Frage 2 – Welche Änderungen zur Richtlinie sind notwendig?

Falls die EC DNV’s Schlussfolgerungen zustimmt, dass Richtlinie 92/91/EEC aufgearbeitet/aktualisiert werden sollte, dann sind spezifische Empfehlungen zur Verbesserung der Richtlinie, die sich aus der Überprüfung ergeben haben, in Tabelle 1.2 und Tabelle 1.3 vorgestellt,
zusammen mit Diskussionen über die Erkenntnisse, die zu diesen Empfehlungen führen. Die Empfehlungen, die in Tabelle 1.2 vorgestellt werden, sind Aspekte der Richtlinie, die DNV zur Beibehaltung empfiehlt. Die nachfolgenden Empfehlungen in Tabelle 1.3 sind für Änderungen / Aktualisierungen zur Verbesserung der Richtlinie vorgesehen.

**Tabelle 1.2 Empfehlungen für Aspekte der Richtlinie, die beibehalten werden sollten**

<table>
<thead>
<tr>
<th>Empfehlung</th>
<th>Diskussion</th>
</tr>
</thead>
</table>
| **E1.** Richtlinie 92/91/EEC sollte **eine Richtlinie** bleiben (und nicht in eine Verordnung geändert oder entfernt werden). | Die Überprüfung zeigt deutlich, dass die Kultur, Rechtsordnung und Geschichte der verschiedenen Länder unterschiedlich sind und dass der Richtlinienansatz die Flexibilität ermöglicht, die EU-Rechtsvorschriften in einer Weise, die der Situation eines Landes passt, zu implementieren. Dies wurde von vielen der befragten Betroffenen als wichtig gesehen. Während der Bewertung wurde von keinem der Beteiligten vorgeschlagen, die Richtlinie aufzuheben oder sie in eine Anleitung umzuändern. Es wird darauf hingewiesen, dass die derzeitige Rechtsgrundlage nur die Verabschiedung von Richtlinien im Bereich der Sicherheit und Gesundheit am Arbeitsplatz (siehe Abschnitt 4) erlaubt. Es wurde daraus der Schluss gezogen, dass die Möglichkeit der Umwandlung der Richtlinie zu einer EU-Verordnung derzeit nicht vorhanden ist. 
(Auch in Abschnitten 6.1.1.2 und 6.1.1.4.3 beschrieben). |
| **E2.** Die Richtlinie 92/91/EEC sollte ihren zielgerichteten Ansatz beibehalten. | Basierend auf den Ansichten, die von Beteiligten aus verschiedenen EU- und EEA-Ländern in den Gesprächen zum Ausdruck gebracht wurden, ist der zielstrebige Ansatz als sehr vorteilhaft gesehen. Zu diesen Vorteilen gehörten:
• Die Flexibilität für die Industrie, die Sicherheit der Arbeitnehmer auf innovative Weisen (wie auch mit traditionellen Methoden) zu schützen
• Die Förderung kontinuierlicher Verbesserungen während Sicherheitsstandards und Erwartungen steigen.
• Es ist anwendbar sowohl in anspruchsvolleren Umgebungen der Mineraliengewinnungsinustrie (z. B. die Gewinnung von Mineralien durch Bohrungen in arktischen Gewässern, Offshore westlich von Irland, in tiefen Gewässern, etc.) als auch in der aktuell genutzten Umgebungen.
• Es unterstützt die Regulierungsbehörden dabei, dafür zu sorgen, dass die Erkenntnisse (einschließlich Erkenntnisse aus Unfällen) von der Bodenschutzgewinnungsinustrie in einer schnellen und effizienten Weise berücksichtigt und aufgenommen werden.

Es wird angemerkt, dass der zielstrebige Ansatz mit einigen herkömmlichen Vorschriften unterstützt werden kann. Dies wird genauer unter Empfehlung E12 diskutiert. 
(Auch in Abschnitten 6.1.1.2 und 6.2.2.2 beschrieben). |
Tab. 1.3 Empfehlungen für Änderungen zur Direktive

<table>
<thead>
<tr>
<th>Empfehlung</th>
<th>Diskussion</th>
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<tbody>
<tr>
<td><strong>E4.</strong> Die Richtlinie sollte geändert werden, um <strong>aktuelle, gängige Praktiken</strong> aus den Regierungssystemen der EU- und EEA-Ländern miteinbringen; darunter sind auch viele der Aspekte, die durch die vorgeschlagenen Rechtsvorschriften für die Sicherheit in der Offshore Öl- und Gas-Industrie mit übernommen wurden.</td>
<td>Wie bereits angemerk't haben mehrere Beteiligte die Notwendigkeit zur Zusammenarbeit zwischen der Richtlinie und der vorgeschlagenen Gesetzgebung angemerkt angesprochen. Es wurde auch festgestellt, dass es viele Aspekte in der vorgeschlagenen Rechtsvorschrift gibt, die sinnvollerweise in der Richtlinie eingebracht werden könnten, z. B. eine unabhängige Überprüfung der Landbohrungen. Es ist daher zu folgern, dass die Richtlinie geändert werden sollte, um <strong>mit der vorgeschlagenen Rechtsvorschrift an der Sicherheit von Offshore Erdöl- und Gas-Prospektion, Exploration und Produktion zusammenzuarbeiten</strong> und die guten Praktiken aus dem aktuellen Entwurf der vorgeschlagenen Gesetzgebung mit einbezogen sollte. (Auch in Abschnitten 6.1.1.1, 6.1.1.4.6 und 6.2.2.1 beschrieben).</td>
</tr>
</tbody>
</table>
| **E5.** Die Direktive sollte so umgeändert werden, dass es **proportional zum inhärenten Risiko** der Mineraliengewinnungsaktivität en **umgesetzt werden kann** (d.h. Öl und Gas gegenüber Salz, etc.). | Der Empfehlung folgend, den risikobasierten Ansatz beizubehalten und der Erkenntnis, dass die Länder, die nicht über eine Offshore Öl- und Gasindustrie verfügen keine Notwendigkeit zur Änderung der Richtlinie sahen, wird der Schluss gezogen, dass es wichtig ist, Änderungen in der empfohlenen Art durchzuführen. Auf diese Weise werden Anforderungen an von Groß-Gefahren betroffenen Mineraliengewinnungsindustrien (z. B. Öl und Gas) nicht auch Mineraliengewinnungsindustrien mit einem geringeren inhärenten Risiko (z.B. Salzgewinnung) aufgezwungen. 

Dies sollte dabei helfen, die Situation, in der der Verwaltungsaufwand von den Beteiligten als "angemessen und akzeptabel" angesehen wird, beizubehalten. (Auch in Abschnitt 6.2.1.3 beschrieben). |
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<tr>
<th>Empfehlung</th>
<th>Diskussion</th>
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Basierend auf den Gesprächen und Antworten der Umfrage seien Anteilhaber aus den gesamten EU- und EEA-Ländern die Richtlinie als "alle Gefahren" für Arbeitnehmer abdeckend. Das heißt, sie erkennen an, dass die Richtlinie sowohl "Groß-Gefahr" Unfälle als auch "Arbeits- und Gesundheitsschutz" abdeckt. Sie möchten, dass die Anforderungen der Richtlinie ausgewogen und klar in ihrer Anwendbarkeit auf diese verschiedenen Risikotypen sind. Um dies zu erreichen, ist ein Vorschlag die Richtlinie in separate Abschnitte einzuteilen, um diese Bereiche anzugehen. 

Es sollte beachtet werden, dass diese Unfallarten so definiert werden müssten, dass es klar ist, dass die Richtlinie das gesamte Spektrum der Gefahren für die Arbeitnehmer in der Gewinnung von Bodenschätzen durch Bohrungen Industrie deckt. 

(Auch in Abschnitten 6.1.1.1, 6.1.1.3.2 und 6.2.2.1 beschrieben). |


In diesen Gesprächen erklärten die Beteiligten die Meinung, dass der Richtlinie Details in Bezug auf Bohraktivitäten und Bohrlochkontrollen fehlten. Die Abweichungsanalyse identifizierte die Angemessenheit der Bohrlochkonstruktion und Bohrlochkontrollverfahren als Bereiche, die mit kausalen Faktoren an schweren Unfällen beteiligt waren, insbesondere wenn es eine Schwäche in den spezifischen Anforderungen in der Richtlinie gab. 


(Auch in Abschnitt 6.1.1.4.1 beschrieben). |
<table>
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<th>Empfehlung</th>
<th>Diskussion</th>
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## Empfehlung | Diskussion
---|---
**E10.** Die Richtlinie sollte eine spezifische Anforderung an die Verantwortlichen beinhalten, ein **Verwaltungssystem** zu haben, dass die Anforderungen der Richtlinie umsetzt und ihre kontinuierliche Verbesserung fördert.  
Es ist zu beachten, dass die Umsetzung dieser Empfehlung auch die spezifischen Verwaltungssystemprobleme, die in der Abweichungsanalyse identifiziert wurden, angehen sollte.  
(Auch in Abschnitt 6.1.1.4.1 beschrieben).

**E11.** Die Richtlinie sollte die Notwendigkeit der Erkennung von **kritischen Anlagen, Aktivitäten und Kompetenzen** (durch den Risikobewertungsprozess) zur Sicherheit gewährleisten, und damit auch eine Voraussetzung für nachfolgende Überprüfungen der kritischen Komponenten, Aktivitäten und Kompetenzen zusammen mit einem **kontinuierlichen Verbesserungsprozess** einbeziehen.  
Wie bereits erwähnt, wurde festgestellt, dass die Verwendung von Risikobewertungen in den meisten EU- und EEA-Ländern üblich ist. Es wurde jedoch auch die Möglichkeit identifiziert, die Richtlinie so zu erweitern, dass die Anforderung für Risikobewertungen hervorgehoben wird, damit "sicherheitskritische" Aspekte und deren erwartete Ausführung (zum Schutz der Arbeitnehmer) ein akzeptables Maß an Sicherheit liefern.  
Die Abweichungsanalyse wies die "Identifikation und Analyse von Aufgaben mit entscheidender Bedeutung für das Verwalten von Sicherheit" als wichtig aus. Dieser Punkt kam auch beträchtlich in den Gesprächen zum Vorschein, zusammen mit der Wichtigkeit für Gesundheits- und Sicherheits-Berichte eindeutig zu identifizieren, was "kritisch" ist für die Sicherheit und welche "Zusicherungen" / "Nachweis"-Aktivitäten erforderlich sind, um zu zeigen, dass diese Aspekte wie gewünscht funktionieren. Eine Veranschaulichung, dass sicherheitskritische Aspekte nach Bedarf funktionieren, füllt die Regulierungsbehörden mit Zuversicht, dass die Sicherheit der Arbeitnehmer geschützt wird.  
Es wird anerkannt, dass Art. 6 Abs. 3a der Rahmenrichtlinie auf die Notwendigkeit, die Ergebnisse der Risikobewertung zu gewährleisten, anspielt.  
(Auch in Abschnitt 6.1.1.4.5 beschrieben).
### Empfehlung Diskussion

| E12. Elemente in der derzeitigen Richtlinie, die besser in unterstützende Leitlinien und Normen passen würden (z.B. die, die in Artikel 7 des Teils B in Bezug auf sanitäre Anlagen beschrieben sind) sind zu entfernen. | Gesprächsbeteiligte haben auch festgestellt, dass die Richtlinie einige verordnende Anforderungen enthält, die besser in unterstützende Anleitungen passen würden. Sie haben weiter ausgedrückt, dass es im Allgemeinen besser ist, "nicht zielorientierte" Anforderungen aus den folgenden Gründen in Anleitungen oder Standards einzubringen:

- Dies ermöglicht, alternative und/oder innovative Ansätze zu ergreifen, die das gleiche oder ein besseres Sicherheitsniveau erlauben. (Natürlich muss dies durch eine Risikobewertung nachgewiesen werden.)
- Anleitungen und Normen können schneller aktualisiert werden als Richtlinien oder nationale Gesetzgebungen wenn neue Erkenntnisse aus Ereignissen, neuen Technologien, etc. gewonnen wurden, die Schwächen in den derzeitigen Standards oder Richtlinien zum Vorschein bringen und welche verbesserten Ansätze in der Zukunft angewandt werden sollten.

Alle beschreibenden Elemente, die in unterstützenden Anweisungen untergebracht sind, müssen von einer juristischen Zielsetzungsbasis untermauert werden, um ihre rechtliche Grundlage zu erhalten.

(Auch in Abschnitten 6.1.1.2 und 6.2.2.2 beschrieben). |

### 1.5.3 Frage 3 – Sind andere Maßnahmen nötig?

**Fazit aus der Bewertung: Ja.**

Basierend auf den Ergebnissen dieser Überprüfung kam DNV zu dem Schluss, dass die EC zusätzlich zu Änderungen in Richtlinie 92/91/EEC anderer Maßnahmen ergreifen sollte, um ihre Wirksamkeit zu erhöhen. Die Erkenntnisse, die zu diesem Schluss führten, sind in Tabelle 1.4 vorgestellt. Empfehlungen für spezifische Maßnahmen sind in Abschnitt 1.5.4 detailliert.
Tabelle 1.4: Befunde, die zu dem Schluss führten, dass andere Maßnahmen notwendig sind

<table>
<thead>
<tr>
<th>Befund</th>
<th>Diskussion</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>“Als Arbeitsplatz gilt die gesamte Fläche, die zur Einrichtung von Arbeitsplätzen vorgesehen ist, in Bezug auf die Haupt-und Nebenbetriebe und Anlagen der Mineralgewinnung durch Bohrungen Industrien, einschließlich Unterkünfte, wo dies vorgesehen ist, auf die die Arbeitnehmer Zugang haben im Zusammenhang mit ihrer Arbeit”</td>
</tr>
</tbody>
</table>

Wie dies in den verschiedenen Ländern implementiert wurde ist in Abbildung 1.1 zu sehen. Andere Bereiche, in denen die befragten Anteilhaber für Unterstützung gefragt haben sind:
### Befund | Diskussion
--- | ---


Die Beteiligten äußerten den Wunsch nach Unterstützung durch die EU, damit die Länder mit diesen Bedürfnissen von den Ländern, welche ausgereifte und große Industrien in der Regel geschehen, lernen.

(Die Interessengruppen sehen einen Vorteil darin, den Austausch von Wissen und Erfahrungen in den EU- und EEA-Ländern zu erweitern. Dies wurde als hilfreich gesehen für:

- Länder, die sich auf der Lernkurve befinden (siehe vorherige Befunde).
- Schnellere Umsetzung von Maßnahmen in den EU- und EEA-Ländern zum verbesserten Schutz der Sicherheit der Arbeitnehmer in dieser Industrie, basierend auf den Erfahrungen von z.B.:
  - Unfälle und Beinahe-Unfälle.
  - Initiativen.
  - Umsetzung der neuen Leitlinien, Standards, etc.
  - Regulatorische Praktiken.

(Auch in Abschnitten 6.1.3.2, 6.2.1.2 und 6.2.2.1 beschrieben).
Abbildung 1.1 "Arbeitsplatz / geografische Ausdehnung" angesprochen in den nationalen Rechtsvorschriften, die die Anforderungen der Richtlinie 91/92/EEC für Offshore Mineralölgewinnung durch Bohrungen umsetzt
1.5.4 Frage 4 – Welche Maßnahmen sollten ergriffen werden, um die Wirksamkeit der Richtlinie zu verbessern?

Spezifische Empfehlungen für Maßnahmen zur Verbesserung der Wirksamkeit der Richtlinie sind in Tabelle 1.5 vorgestellt, zusammen mit den Feststellungen, die zu den Empfehlungen führten.

**Tabelle 1.5: Empfehlungen für zu ergreifende Maßnahmen zur Verbesserung der Wirksamkeit der Richtlinie**

<table>
<thead>
<tr>
<th>Empfehlung</th>
<th>Diskussion</th>
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(Auch in Abschnitt 6.1.1.3.2 beschrieben). (Auch in Abschnitt 6.1.1.3.3 beschrieben).
### Empfehlung

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<tr>
<th>Empfehlung</th>
<th>Diskussion</th>
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<tbody>
<tr>
<td>iv. Die Teile des Arbeitsplatzes, die abgedeckt sind (und für die Bereiche, die nicht gedeckt sind, welche Richtlinie(n) anzuwenden ist/sind).</td>
<td>Dies bezieht sich auf die Interpretation von „Arbeitsplatz“ in der Mineralgewinnung durch Bohrungen, die schon in Abschnitt 1.5.3 diskutiert und in Abbildung 1.1 dargestellt wurde. Leitlinien sollten solche Fragen wie: &quot;Sind die angebundenen Rohrleitungen einer Produktionstätte abgedeckt?&quot; und &quot;Ist ein Gaskraftwerk, das Meilen von der Abbaustätte entfernt ist, abgedeckt?&quot; beantworten. In den Situationen, in denen neue Leitlinien, die in Reaktion auf diese Empfehlung produziert wurden, bestimmen, dass ein bestimmter Teil eines Arbeitsplatzes nicht unter die Richtlinie 92/91/EEC fällt, sollten die Anleitungen die Richtlinien zur Sicherheit der Arbeitnehmer identifizieren, welche diesen Teil des Arbeitsplatzes abdecken? (Auch in Abschnitt 6.1.1.3.6 beschrieben).</td>
</tr>
</tbody>
</table>

### Die Regulierungsbehörden unterstützen:

b. ***Die Regulierungsbehörden unterstützen:***

Das hochrangige Arbeits- und Inspektions-Komitee (SLIC) und die Gruppe der EU Offshore Öl- und Gas-Behörden können eine wichtige Rolle in diesem Zusammenhang spielen.

i. Bei dem, was zu tun ist, um ein legislatives System zu gründen und zu betreiben, das bei der Verwaltung von nationalen Gesetzgebungen, die die Anforderungen der Richtlinie umsetzen, behilflich ist.

Wie bereits in Abschnitt 1.5.3 diskutiert, haben Beteiligte, die neu in der Industrie der Gewinnung von Bodenschätzen durch Bohrungen oder unvertraut mit einem zielorientierten Regulierungssystem sind, den Wunsch für zusätzliche Unterstützung in der Lernphase ausgedrückt. Anleitungen in diesem Bereich wären von Nutzen. Dies könnte beispielsweise durch eine Wegweisung zur Umsetzung und Leitlinien für gängige Praktiken (zum Beispiel könnte für eine Regulierungsbehörde erklärt werden, wie eine risikobasierte Inspektion entworfen ist und strukturiert wird) erreicht werden. (Auch in Abschnitten 6.1.2.2, 6.1.3.1 und 6.2.2.1 beschrieben).
### Empfehlung vs. Diskussion

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<tr>
<td>ii.</td>
<td>Bei der Übernahme ihrer Rolle, und um Aktivitäten in Kraft zu setzen, die den Aufbau einer guten Sicherheitskultur unterstützen und kontinuierliche Verbesserung anstreben.</td>
</tr>
<tr>
<td></td>
<td>In den Interviews gab es erhebliche Diskussionen über die Aktivitäten, die gute Sicherheit über die Anforderungen der Gesetzgebung hinaus fördern. Die Länder mit gereifter Industrie der Groß-Gefahr Mineraliengewinnungsextraktion durch Bohrungen präsentierten viele Tätigkeiten, die sie unternehmen, um dieses Ziel zu unterstützen. Würde die EC Beispiele gängiger Praxen zusammenstellen und diese mit den Aufsichtsbehörden teilen, wäre dies von Nutzen.</td>
</tr>
<tr>
<td>c.</td>
<td>Die Informationen zur Verfügung stellen, die einer Regulierungsbehörde zugänglich sein sollten, um ihre Rolle auszuführen.</td>
</tr>
<tr>
<td></td>
<td>Die Überprüfung erläutert einige Variationen, die in den Unterlagen und Informationen, welche zur Verfügung gestellt werden, existieren, und auf welcher Grundlage und Frequenz zwischen den EU- und EEA-Ländern diese bestehen. Eine Anleitung zu den Arten von Informationen, die die Industrie den Aufsichtsbehörden liefert und wobei es diesen hilft, Gewissheit zu gewinnen, würde dabei behördlich sein. Dies sollte die Lebenszyklus-Phasen abdecken, einschließlich Entwurf s/- Bauphase, Bohraktivitäten, Produktion etc.</td>
</tr>
<tr>
<td>d.</td>
<td>Deutlich die benutzten Begriffe definieren, z.B. “der Arbeitgeber”.</td>
</tr>
<tr>
<td>e.</td>
<td>Die Schnittstellen zwischen der Richtlinie und anderen Richtlinien / Gesetzgebungen beschreiben.</td>
</tr>
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(Siehe auch Abschnitte 6.1.1.3.2, 6.2.1.2 und 6.2.2.2).
### Empfehlung

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<td>f.</td>
<td>Den gesamten Prozess erklären, von der Risikoerkennung bis zur Gewinnung der Gewissheit, dass Risiken angemessen verwaltet werden (einschließlich der Wichtigkeit der Identifizierung dessen, was “kritisch” zur Verwaltung der Sicherheit ist)</td>
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<td></td>
<td>In den Ländern mit gereiften Öl- und Gasindustrien, die weitgehend die zielorientierte Rechtsauslegung angenommen haben, waren die Beteiligten mit dem gesamten Prozess vertraut, von der Risikoidentifikation bis zur Gewinnung der Gewissheit, dass Risiken entsprechend verwaltet werden. Diese Länder haben im Allgemeinen einen weiteren Überblick über die Verwendung des Prozesses zur Identifikation dessen, was bei der Bewältigung der Risiken in der Gewinnung von Mineralien durch Bohraktivitäten entscheidend ist, und bedenken dabei Hardware, Systeme und Prozesse, als auch Kulturen und Kompetenzen (Anlage - Prozess - Personen). In diesen Ländern sind daher die Anforderungen an die Vertrauenswürdigkeit weitgehend konzentriert.</td>
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<td></td>
<td>In weniger entwickelten Ländern oder denen, die unvertraut mit zielorientierter Gesetzgebung sind, könnte das Verständnis dieses Prozesses, Gewissheit über eine breite Palette von Aspekten entscheidend für die Steuerung der Risiken zu liefern, verbessert werden. Dies würde bei der Bereitstellung von Schutz für die Arbeitnehmer helfen, indem nicht nur eine gute Risikobewertung, sondern auch Verifikation und Inspektion auf einer breiten Palette von Aspekten (Anlagen-Prozesse-Personen), die kritisch zur Verwaltung von Risiken sind, sichergestellt werden. Dabei werde über eine physische Kontrolle der Hardware hinausgegangen.</td>
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<td></td>
<td>Aus den Gesprächen kam auch heraus, dass die Bedeutung der Gefährdungsbeurteilung das zu ermitteln, was als &quot;sicherheitskritisch&quot; angesehen ist, wichtig ist. Es wurde festgestellt, dass es diese Aspekte sind (Aufgaben, Ausrüstung, Kompetenzen, etc.), die die Sicherheits- und Gesundheits-Dokumente eindeutig identifizieren müssen und welche &quot;Gewissheits-&quot; / &quot;Verifikations-&quot; Aktivitäten gebraucht werden, um zu zeigen, dass sie wie gewünscht arbeiten. Vorführungen die aufzeigen, dass sicherheitskritische Aspekte nach Bedarf funktionieren, geben den Regulierungsbehörden die Zuversicht, dass die Sicherheit der Arbeitnehmer geschützt wird.</td>
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<tr>
<td></td>
<td>Anleitungen, die die Verbindung von Risikoidentifikation zur Risikobewertung, zur Identifizierung von Ausrüstung, Tätigkeiten oder Kompetenzen, die entscheidend für die Aufrechterhaltung der Integrität jeder Anlage, die in der Mineraliengewinnung durch Bohrungen Aktivitäten (und die Definition ihrer Funktionalität) engagiert ist, sind, zu Inspektion und Überprüfungsaktivitäten erklären, würden daher die Beteiligten unterstützen. Dies sollte alles im Rahmen eines Sicherheits- und Gesundheits-Verwaltungs-Systems geschehen.</td>
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<td></td>
<td>Es wird darauf hingewiesen, dass dies zu einem gewissen Grad in dem Dokument der Kommission &quot;Leitlinien für Risikobewertung am Arbeitsplatz&quot; (EC, 1996), das zur Unterstützung der Rahmenrichtlinie (Richtlinie 89/391/EEC) entwickelt wurde, erreicht ist.</td>
</tr>
</tbody>
</table>

(Siehe auch Abschnitte 6.1.1.4.1, 6.1.1.4.2, 6.1.1.4.4 und 6.1.1.4.5).
<table>
<thead>
<tr>
<th>Empfehlung</th>
<th>Diskussion</th>
</tr>
</thead>
</table>
| g. **Gute Richtlinien für Mitarbeiter-Engagement zu erarbeiten** | Es gab eine Reihe von Ansätzen, die Belegschaft in Sicherheitsaspekte sowohl in einzelnen Einrichtungen als auch auf nationaler Ebene zu involvieren. Zum Beispiel gab es verschiedene Ansätze, denen in Bezug auf die Sicherheits-Repräsentation gefolgt wurden. Ein Sicherheitsbeauftragter kann die Sicherheit einer Belegschaft auf einer Vollzeit-Basis vertreten, oder er kann diese Verantwortung zusätzlich zu seiner normalen Arbeit übernehmen, oder er vertritt die Arbeitnehmer in allen Fragen. In den Gesprächen wurde klar, dass:  
- In den Situationen, in denen der Vertreter auch eine normale Arbeit hat, kann es schwer fallen, so aktiv auf die Sicherheit zu achten, wie es sich einige Anteilhaber wünschen. Beispiele, die gegeben wurden, betrafen Situationen, in denen der Vertreter eine Ausbildung für die Rolle übernehmen musste, wenn er "Im Urlaub" war.  
- In Situationen, in denen der Sicherheitsbeauftragte ein Teil der Arbeitnehmervertretungsrolle ist, wurde Sicherheit für unwichtiger als zum Beispiel Lohn- und Arbeitsbedingungen empfunden. |
| **E14.** Die Kommission sollte intern Rücksprache mit den Verantwortlichen für den Schutz der Öffentlichkeit finden, um zu bestimmen, ob es Leitlinien über die Angemessenheit der Länder, die Anwendungsbereiche der nationalen Gesetzgebung zur Erweiterung, um die Öffentlichkeit abzudecken. | Der Schutz der Allgemeinheit liegt eindeutig außerhalb des Anwendungsbereiches der Richtlinie 92/91/EEC. Es ist auch klar, dass die Öffentlichkeit den Risiken von Mineraliengewinnung durch Bohrungen Tätigkeiten ausgesetzt ist. Dies wurde in Gesprächen mit deutschen Akteuren deutlich, in denen die Risiken von Gasleitungen, die H₂S-enthaltendes Gas zwischen landbasierten Bohrkernen und Verarbeitungsanlagen transportieren, diskutiert wurden.  
Antworten aus einigen Ländern zeigen, dass sie den Umfang ihrer Gesetzgebung zur Umsetzung der Anforderungen der Richtlinie 92/91/EEC erweitert haben, um den Schutz der Allgemeinheit (wie auch der Arbeitnehmer) mit einzuarbeiten, siehe Abbildung 1.2.  
Angesichts dieser Tatsachen ist es empfehlenswert, dass die Kommission intern Rücksprache mit den Verantwortlichen für den Schutz der Öffentlichkeit suchen sollte. Sie sollten bestimmen, ob es Leitlinien geben sollte über die Angemessenheit der Länder, den Anwendungsbereichs der nationalen Gesetzgebung zu erweitern und die breite Öffentlichkeit mit abzudecken, und dass dies nicht nur den Bohrplatz sondern auch die zugehörigen Einrichtungen, die unter die Richtlinie fallen, berücksichtigen sollte. |

(Auch im Abschnitt 6.1.3.3 beschrieben).  
(Auch im Abschnitt 6.1.1.3 diskutiert).
### Empfehlung

**E15.** Die Kommission sollte untersuchen, welche weiteren Rolle der Sicherheitsbeauftragte übernehmen könnte, und wie sie mit den Beteiligten zusammenarbeiten kann, um einschlägige **Richtlinien, Praktiken und technischen Standards in den EU-und EEC-Ländern** vereinbaren zu können.

<table>
<thead>
<tr>
<th>Diskussion</th>
</tr>
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</table>
| Es gibt bereits Anleitungen, die der Industrie zur Verfügung stehen. Die Quelle und das Niveau der Anleitungen variiert je nach Land, siehe Abbildung 1.3. Ein Problem, das in den Gesprächen angesprochen wurde, ist dass die "Praktiken und Standards", die durch die Regulierungsbehörden in den EU und EEC-Ländern gefördert werden, variieren, und die Schnittstellen in denen Regulierungsbehörden genehmigten Standards ist zwischen den Ländern sehr begrenzt. 


Die Kommission könnte eine Rolle bei der Arbeit mit den Anteilnehmern übernehmen, um relevante technische Standards zu vereinbaren, die in den EU- und EEA-Ländern verwendet werden sollen, zumindest für einen Kernsatz von Standards.

Eine Kommission, die die Entwicklung von harmonisierten, technischen Normen unterstützt / ermöglicht, ist nicht ohne Präzedenzfall. Derzeit tut sie dies und eine Reihe von harmonisierten Normen (EC, 2012b) wurden entwickelt, die derzeit im Einsatz sind für eine Reihe von Wirtschaftssektoren / Produkte; keine von diesen ist speziell auf die Mineralgewinnungsindustry bezogen [3].


Die Maschinenrichtlinie Administrative Kooperation Gruppe (ADCO) und die EU-Maschinenrichtlinie Interessen Gruppe und EU beratende Ausschüsse für Sicherheits- und Gesundheits-Standardisierung könnten bei dieser Empfehlung hilfreich sein.

(Siehe auch Abschnitte 6.1.1.2, 6.1.3.1 und 6.2.1.2).
### Empfehlung | Diskussion
--- | ---
**E16.** Die Kommission sollte herausfinden, wie sie die Festlegung von *Engagement-Forien für das Lernen und eine kontinuierliche Verbesserung* unterstützen kann, die die Erhaltung und Verbesserung der unterstützenden Materialien bestimmen, einschließlich:
- a. Anleitungen.
- b. Technische Standards.

Die Überprüfung erfuhr von den Beteiligten, dass eine kontinuierliche Verbesserungsschleife, die angelegt wurde, um alle Aspekte ihrer nationalen rechtlichen Rahmenbedingungen zu erhalten und zu aktualisieren, ein wichtiger Aspekt für den Erfolg bei der Sicherheit der Arbeitnehmer in der Branche war.

Auch ist es klar, dass die Aktualisierung von Leitlinien und Normen schneller erreicht werden kann als die Aktualisierung von Rechtsvorschriften.

Kontinuierliche Verbesserungsschleifen (Systeme und Prozesse) können dabei helfen sicherzustellen, dass die Richtlinien und Standards rechtzeitig aktualisiert werden, um Erkenntnisse aus Erfahrungen und Unfällen zu reflektieren. Dies sollte auch die Entwicklung von *Engagement-Forien* zwischen den primären Akteuren (Regulierungsbehörden, Industrie und Gewerkschaften) beinhalten, in denen das Lernen (z.B. durch Unfälle, Inspektionen, etc.) geteilt wird und als Eingabe für kontinuierliche Verbesserungen genutzt wird. Es wird darauf hingewiesen, dass dies für eine Anteilhabergruppe (den Aufsichtsbehörden) mit der kürzlich gegründeten Offshore Öl- und Gas-Behörden Gruppe (EU, 2012) gestartet wurde. (Siehe auch Abschnitte 6.1.1.2, 6.1.2.2, 6.1.3.2, 6.1.3.3, 6.1.2.1 und 6.2.1.2).

**E17.** Die Kommission sollte untersuchen, welche Rolle sie übernehmen könnte und wie sie die *Regulierungsbehörden* in einer frühen Phase der Umsetzung ihrer nationalen Gesetzgebung für die Anforderungen der Richtlinie 92/91/EEC unterstützen kann, um ihnen dabei zu helfen, die *Fähigkeiten* und Erfahrungen, die sie benötigen, aufzubauen, um die Industrie effektiv zu regulieren

Von der Überprüfung zeigte sich, dass dort, wo sich eine bedeutende Industrie befindet, die Aufsichtsbehörden erheblichen Mittel für die Entwicklung / Aktualisierung, Ausführung, Unterstützung und Durchsetzung der Rechtsvorschriften haben, die die Anforderungen der Richtlinie 92/91/EEC in ihrem Land durchsetzt.

Für die Länder mit neuen / kleinen Öl- und Gasindustrien wurde festgestellt, dass ihre regulatorischen Mitte und ihr Wissen über die Branche, deren Risiken und wie man die Risiken verwalten kann beschränkt waren. In diesen Ländern bitten die Regulierungsbeauftragten um Unterstützung, damit sie ihre Fähigkeiten aufbauen können. Das gleiche Bedürfnis, Kompetenzen aufzubauen, wurde auch von Ländern, die ihre Gesetzgebung zielorientiert ausrichten wollen, ausgedrückt.

Es wird als wichtig angesehen, dass die Regulierungsbehörden die Fähigkeiten aufbauen und haben, um die Industrie erfolgreich zu regulieren, und dadurch dazu zur Sicherheit der Arbeitnehmer beitragen.

Für all diejenigen, die Fähigkeiten aufbauen müssen, wäre die Unterstützung der Kommission zur nachhaltigen und erfolgreichen Lieferung der Anforderungen der Richtlinie 92/91/EEC von Vorteil.

(Auch in Abschnitten 6.1.1.2, 6.1.2.2 und 6.2.1.2 beschrieben).
Die Analyse und Evaluierung der Auswirkungen der praktischen Anwendung von nationalen Gesetzgebungen in Zusammenhang von Sicherheit und Gesundheit am Arbeitsplatz in der Gewinnung von Bodenschätzen durch Bohrungen

Abbildung 1.2 “Wer ist geschützt” durch die national Gesetzgebungen, die die Anforderungen der Richtlinie 91/92/EEC durchsetzen, geordnet nach Bevölkerungsgruppen
Abbildung 1.3 Verfügbarkeit von Anleitungen zur Unterstützung der Industrie, mit nationalen Rechtsvorschriften zur Umsetzung der Anforderungen der Richtlinie 92/91/EEC übereinzukommen
FINAL REPORT
FOR
THE ANALYSIS AND EVALUATION OF THE EFFECTS OF THE PRACTICAL APPLICATION OF NATIONAL LEGISLATION RELATED TO SAFETY AND HEALTH AT WORK IN MINERAL EXTRACTION THROUGH DRILLING

EUROPEAN COMMISSION
DG Employment, Social Affairs and Inclusion
Employment and Social Legislation, Social Dialogue Health, Safety and Hygiene at Work

EUROPEAN COMMISSION CONTRACT REFERENCE VC/2011/0499
REPORT NO./DNV REG NO.: 1/13YD88G-1
REV 1, 15TH FEBRUARY 2013
The Analysis and Evaluation of the Effects of the Practical Application of National Legislation Related to Safety and Health at Work in Mineral Extraction Through Drilling

For:
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Directorate General Employment, Social Affairs and Inclusion,
EMPL.B.3,
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Belgium.

European Commission,
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Account Ref.:
VT/2011/042

Date of Current Issue: 15th February 2013
Project No.: PP030087
Revision No.: 1 - Final
DNV Reg. No.: 13YD88G-1
Report No.:

Summary:
The European Commission wishes to analyse how Directive 92/91/EEC has been transposed and implemented by the European Union Member States and European Economic Area countries, and evaluate how effective the national legislation is at protecting the safety and health of workers. The outcome will be used to inform the European Union on any changes that may be required to the directive, or to provide justification if no such changes are needed. This document is the report on the review of Directive 92/91/EEC completed for the European Commission by DNV.

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Reference to part of this report which may lead to misinterpretation is not permissible.
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1 EXECUTIVE SUMMARY

1.1 Background

The European Union (EU) seeks to a) protect the safety and health of workers and b) secure improvements in the working conditions of workers across all its member states. It does so by enacting directives that govern all activities relating to health and safety at work (and thus protection of workers). The authority to enact directives in this field stems from article 153 of the Treaty on the Functioning of the European Union.

The EU has enacted a wide range of directives that set out minimum health and safety requirements for the protection of workers. Directive 89/391/EEC is the principal directive in this field. It is the EU’s health and safety at work “framework directive” and its aim is to introduce measures to encourage improvements in the safety and health of workers at work. It applies to all sectors of activity, both public and private, (excluding some specific public service activities, e.g. the armed forces and the police). It lays down general principles concerning the prevention and protection of workers from various sources of risk.

Under Directive 89/391/EEC there are a series of individual directives. The individual directives contain more detailed provisions for specific areas aspects of health and safety at work. Directive 89/391/EEC with its general principles continues to apply in full to all the areas covered by the individual directives (i.e. despite the fact that the latter individual directives are subordinate to the framework directive, they both apply in equal measure and should always be read in tandem).

Directive 92/91/EEC, adopted in 1992, concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling, is one of the individual directives under Directive 89/391/EEC.

The European Commission (EC) wishes to analyse how Directive 92/91/EEC has been transposed and implemented by the EU Member States and EEA countries, and evaluate how effective the national legislation is at protecting the safety and health of workers. The outcome will be used to inform the EU on any changes that may be required to the directive, or to provide justification if no such changes are needed.

The following are the drivers for the review:

- The accession of additional member states to the EU since the last review.
- Oil and gas drilling and production activities in:
  - Areas where exploration and / or production activities are taking place for the first time (e.g. oil and gas exploration in the waters of Cyprus).
  - More challenging and complex environments (e.g. West of Shetland and the Arctic).
- Increased awareness of the risks associated with oil and gas exploration following the Deepwater Horizon accident.
- The proposed legislation¹ from the EC that covering major accidents in offshore oil and gas prospection, exploration and production activities.

1.2 Objectives
The main objectives for the review are as follows:

1. To analyse and evaluate the practical application of national legislation related to safety and health at work in mineral extraction through drilling.

2. To compare the various ways in which Directive 92/91/EEC has been transposed and implemented by the Member States.

3. To examine the impact the Directive 92/91/EEC has had in Member States.

4. To review the provisions of Directive 92/91/EEC following the Deepwater Horizon accident, and indicate if changes are required (or justify requiring no changes).

5. To consider what changes are needed to Directive 92/91/EEC to ensure continuity with the proposed European legislation on safety in the offshore oil and gas industry (EC, 2011).

6. To analyse if other options could be used to increase the effectiveness of Directive 92/91/EEC.

7. To support the preparation of the Analytical Document for the Social Partner consultation that will be needed if changes to the Directive are envisaged (if necessary).

1.3 Scope of the Review
The scope covers safety and health at work in the mineral extraction through drilling industries in EU member states and EEA countries.

The specification requires the review to identify, analyse, and assess:

a. The specific prevention approaches adopted by member states and by undertakings and public sector bodies, e.g. organisational measures.

b. The balance of regulatory attention given to major hazard control measures compared to conventional occupational health and safety systems.

c. The impact of these specific prevention approaches on all levels of safety and health protection at work.

d. The difficulties and the positive effects encountered by undertakings and public sector bodies in connection with the practical application of legislation on safety and health at work.

e. Any unexpected negative or positive side effects resulting from the practical application of legislation on safety and health at work.

In all cases effects on small and medium-sized enterprises (SMEs) and self-employed workers are to be considered. In addition it was required that the analyses must highlight the main differences among the 27 Member States and examine the potential consequences on the safety of offshore operations across Europe.
1.4 Approach

In order to structure the work and promote a systematic approach, the activities started by expanding the objectives into a list of questions to answer organised around a number of high level themes namely:

- Background / contextual information (current / future level of activity, historical trends etc.).
- The regulatory approaches adopted across EU and EEA countries.
- The scope of the national legislation.
- Requirements, practices and enforcement.
- Effectiveness / evaluation.
- Future considerations.

The study then answered them by using the following methods:

- Gap analysis of the directive against the findings from selected major accidents.
- Semi-structured interviews with stakeholders in selected countries.
- Survey of a wide group of stakeholders in all relevant countries.
- Analysis of industry activity and its safety performance from published data, information gained from the interviews and survey to produce a simple overview of the mineral extraction through drilling in EU and EEA countries.
- Triangulation of the findings from the above activities.

1.5 Discussion and Recommendations

A wide range of insights relating to directive were identified as part of this work. This covered aspects such as:

- Whether changes to the directive are required.
- What and where such changes should be effected (i.e. within the directive or in documents in support of directive e.g. supporting explanatory text).
- Proposals on how these changes should be made as well the role certain parties/stakeholders can take in the change process.

In order to give a sense of priority / importance to the overall output of this work, the findings, conclusions and recommendations are presented considering the fundamental questions which together lie at the core of this review:

- Question 1 - Are changes needed to the directive? (Answered in Section 1.5.1).
  - Question 2 - If yes, what changes are needed to the directive? (Answered in Section 1.5.2).
- Question 3 - Are other actions needed to increase the directive’s effectiveness? (Answered in Section 1.5.3).
Question 4 - If yes, what other actions should be taken to increase the effectiveness of the directive? (Answered in Section 1.5.4).

1.5.1 Question 1 - Are changes needed to the directive?

Conclusion from this review: Yes.

Based on the findings of this review, DNV concludes that Directive 92/91/EEC should be updated. It should be noted that this conclusion is largely driven by the needs of the major accident mineral extraction through drilling industry, and more specifically the offshore oil and gas industry. The findings that lead to this conclusion are presented in Table 1.1. Recommendations for specific changes to the directive are made in Section 1.5.2.

Table 1.1 Primary findings leading to the conclusion that changes to the directive are needed

<table>
<thead>
<tr>
<th>Finding</th>
<th>Discussion</th>
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<tr>
<td>Stakeholders in countries where the directive is of greatest importance in protecting the safety of workers, due to the inherent risk of their mineral extraction through drilling industry, explicitly stated that they would like the directive to be modified, i.e. an update of the directive is seen as supporting improved protection for workers in the major hazard mineral extraction through drilling industries.</td>
<td>Specifically stakeholders in the majority of countries with an offshore oil and gas exploration and production (70%) hold the view that the directive should be modified. The EC want to ensure that workers in the offshore oil and gas industry are protected. This is evidenced by their request for this review to focus on this industry, and their proposed legislation for this industry. Given that the risks associated with offshore oil and gas drilling (e.g. blowouts, harsh and remote locations, deep-water drilling, potential for significant environmental pollution etc.) are arguably the most significant of any mineral extraction through drilling activity, this position is understandable. DNV note that countries without an oil and gas (high hazard mineral extraction through drilling) industry do not see a need to modify the directive. (Also see Section 6.1.1.1).</td>
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<tr>
<td>Current industry and regulatory good practice has moved on since 1992 and are not fully reflected in the directive.</td>
<td>Current industry and regulator good practice has moved on from what it was in 1992 (the year the directive was introduced). National legislation in various EU and EEA countries has evolved / been refined since 1992 to accommodate new learning’s based on going experience. This can be evidenced by the legislative changes in in, for example, Denmark and Norway. Similarly the industry has improved its practices. This can be seen through the guidance issued by trade associations and other bodies in response to learning, and statements during interviews with international oil and gas companies, who now view their systems as going beyond the legislative requirements in many countries. It is recognised that the directive’s design, namely its adoption of a goal setting approach and its requirement for advances in technology to be taken into account (by virtue of the framework directive) are designed to ensure that the directive remains applicable as practices and technology change. These features of the directive are also designed to ensure that minimum standards evolve (improve) over time. As the Directive 92/91/EEC has remained unchanged since its introduction over 20 years ago, it can be concluded that its design has been robust, maintaining its applicability over this period. Nevertheless, areas in which improvements can be made to the directive have been identified. The suggested modifications are discussed further under the question ‘“…what changes are needed to the directive?”’. (Also see Section 6.2.1.2 and 6.2.2.2).</td>
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</table>

2 9 out of 14 countries with an offshore oil and gas industry of those expressing a view
Various specific areas in the directive itself (as a whole) or with specific provisions were identified (by the review) as being limited. The limitations could impact negatively on its capacity to support the protection of workers.

Whilst the central design elements / features of the directive, namely its goal setting approach, the requirement for a risk assessment and the need to take account of technological advances, ensure it has broad range applicability to cover a broad range of risk types, activities and situations (thus making it quite robust overall), certain areas have been identified by stakeholders as requiring improvement / further elaboration. Instances include:

- The requirements for control of hazards during drilling were seen as being limited.
- The directive is perceived to focus more heavily on occupational health and safety issues and less on major hazard accidents.
- Improved clarity on the scope and areas of application of the directive, especially with regards to:
  - Types of mineral extraction activities covered.
  - The stages over the lifecycle of a mineral extraction it should apply to.
  - The geographical extent / boundaries of the mineral extraction facility within which the directive should apply (e.g. offshore facilities, pipelines and connected facilities).
- Improved clarity of key concepts used in the directive (e.g. the “employer” and how it relates to the network of players involved).
- Closely linked to the above is the need for better clarity on the roles and responsibilities of the parties involved.
- The lack of a specific requirement on the responsible party to have in place a safety management system.

(Also see Sections 6.2.2.2.6.1.4.1, 6.1.1.5 and 6.1.2.1).

The directive and the proposed legislation need to work together. Currently the EC has proposed legislation on the safety of offshore oil and gas prospection, exploration and production activities: “Proposal for a Regulation of the European Parliament and of the Council on safety of offshore oil and gas prospection, exploration and production activities” (EC, 2012a). This proposed legislation seeks to address risks associated with “major accidents” in the offshore oil and gas industry to which Directive 92/91/EEC already applies. Several stakeholders raised, during interviews, the need for the directive and the proposed legislation to work together.

Given this, there is a need to ensure clarity between the scope covered by Directive 92/91/EEC and the proposed legislation, and to ensure that they will work together in a harmonious manner without creating unnecessary duplication.

It was also stated that there are many aspects in the proposed legislation which it would be appropriate to include in the directive.

(Also see Sections 6.2.2).

1.5.2 Question 2 - What changes are needed to the directive? If the EC agrees with DNV’s conclusion on the need to update Directive 92/91/EEC, specific recommendations to improve the directive arising out of the review are presented in Table 1.2 and Table 1.3, along with discussion on findings which lead to them.

The first few recommendations presented in Table 1.2 are aspects of the directive that DNV would recommend are maintained. The subsequent recommendations in Table 1.3 are for changes / updates aimed at improving the directive.
## Table 1.2 Recommendations on aspects of the directive to be maintained

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Discussion</th>
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<tbody>
<tr>
<td><strong>R1. Directive 92/91/EEC should remain a directive</strong> (and not be changed to a regulation or removed).</td>
<td>From the review it is clear that the culture, legal systems and history of the different countries are different and that the directive approach allows the flexibility to implement EU legislation in a manner that fits a countries situation. This was seen as important by many of the stakeholders interviewed. There was no proposal to repeal the directive or to convert it to guidance from any stakeholders during the review. It is noted that the current legal basis only allows the adoption of directives in the field of health and safety at work (see Section 4). It is therefore understood that the possibility of converting the directive to an EU regulation is not currently present. (Also see Sections 6.1.1.2 and 6.1.1.4.3).</td>
</tr>
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| **R2. Directive 92/91/EEC should keep its goal oriented approach.** | Based on the views was expressed in interviews by stakeholders from several EU and EEA countries, the goal oriented approach is seen to have several advantages. These included:  
- Providing flexibility for the industry to protect worker safety in innovative ways (as well as using more traditional methods).  
- Driving continuous improvement as safety standards and expectations rise.  
- Being fit for more challenging mineral extraction through environments (for example mineral extraction through drilling in artic waters, offshore west of Ireland, deep water, etc.) as well as current environments.  
- Supporting regulators to ensure that learning (including learning from accidents) is taken on board by the mineral extraction industry in a prompt and efficient manner.  
It is noted that the goal oriented approach can be supported with some prescriptive requirements. This is discussed further under Recommendation R12. (Also see Sections 6.1.1.2 and 6.2.2.2). |
| **R3. Directive 92/91/EEC should keep the risk based approach.** | The application of risk assessment and taking a risk based approach was supported by stakeholders from across the EU and EEA countries. Its benefits as expressed by the stakeholders is that it allows the regulators and industry to focus their resources on what is of greatest importance to delivering the safety of workers. This approach is also seen as helping to ensure the national legislation implementing the requirements of Directive 92/91/EEC does not pose an unnecessary burden on any party.  
The risk based approach is important as the range of mineral extraction through drilling activities across the EU and EEA countries vary in their inherent level of risk. For example, offshore oil and gas in more extreme environments and deeper waters inherently pose a greater inherent risk than onshore salt extraction. The risk based approach means that the activities undertaken by the industry to manage the risks and the regulator to assure they are adequately managed can be adjusted to be proportionate to the level of risk. (Also see Section 6.2.1.3). |
Table 1.3 Recommendations for changes to the directive

<table>
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<tr>
<th>Recommendation</th>
<th>Discussion</th>
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<tr>
<td>R4. The directive should be modified to <strong>include current good practice</strong> from the regulatory regimes in EU and EEA countries, including many of the aspects that have been taken on board in the proposed legislation for safety in the offshore oil and gas industry.</td>
<td>As noted above several stakeholders raised the need for the directive and the proposed legislation to work together. It was also stated that there are many aspects in the proposed legislation which it would be appropriate to include in the directive, for example, independent verification of onshore wells. It is therefore concluded that the directive should be modified to <strong>work with the proposed legislation on the safety of offshore oil and gas prospection, exploration and production activities</strong> and should take on board the good practices included in the current draft of the proposed legislation. (Also see Sections 6.1.1.1, 6.1.1.4.6 and 6.2.2.1).</td>
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<td>R5. The directive should be modified such that it can be implemented in a manner that is proportionate to the inherent risk of the mineral extraction through drilling activity (i.e. oil and gas vs. salt, etc.).</td>
<td>Following up on the recommendation to maintain the risk based approach, and the recognition that the countries which do not have an offshore oil and gas industry did not see a need to modify the directive, it is concluded that it is important modifications should be made in the manner recommended. In this way the requirements for a major hazard mineral extraction through drilling industry (e.g. oil and gas) would not be imposed on a mineral extraction through drilling industry with a lower inherent risk (e.g. salt extraction). This should help maintain the situation where the administrative burden is seen by stakeholders as being “appropriate and acceptable”. (Also see Section 6.2.1.3).</td>
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<td>R6. The directive should provide more clarity / be more balanced on its requirements in regard to the management of “Major Hazard Accidents” and “Occupational Health and Safety”.</td>
<td>From interviews one of themes expressed by several stakeholders is that the directive is more heavily focused on “occupational health and safety” issues rather than “major hazard” accidents. Based on the interview and survey responses, stakeholders from across the EU and EEA countries see the directive as covering “all hazards” to workers. This means they recognise it covers “major hazard” accidents as well as “Occupational Health and Safety”. They would like the directive’s requirements to be balanced and clear in their applicability to these different risk types. To achieve this, one suggestion is that the directive has separate sections to address these areas. Note that these accident types need to be defined so that it is clear that the directive covers the full range of hazards to workers in the mineral extraction through drilling industry. (Also see Sections 6.1.1.1, 6.1.1.3.2 and 6.2.2.1).</td>
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<tr>
<td>R7. The directive should be made more explicit regarding the management of drilling activities and well control.</td>
<td>This need was identified both in interviews and from the gap analysis, (where causes and contributory factors to past major accidents were compared to the directive’s current requirements). In interviews stakeholders stated that they found that the directive lacked detail on drilling activities and well control. In the gap analysis adequacy of well design and well control procedures were areas associated with causal factors associated with a major accident where there is a weakness in the directive’s specific requirements. Although the directive is limited in its requirements for control of hazards during drilling activities (related to mineral extraction), it is recognised that the directive’s risk assessment approach means that drilling activities should be covered. Also the practice in many countries is to have requirements in their National Legislation to support the management of drilling related risks. (Also see Section 6.1.1.4.1).</td>
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<tr>
<td>Recommendation</td>
<td>Discussion</td>
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<tr>
<td>R8. The directive should clarify the roles and responsibilities of different parties involved in all stages of the mineral extraction through drilling lifecycle.</td>
<td>From interview and the survey it was found that there is an established hierarchy amongst the various players starting with the licensee / concession holder at the peak of the pyramid and cascading downwards to various contractors / sub-contractors. The number of organisations can vary. It was found, however, that the focal point for worker safety responsibility according to national legislation can occur at various levels in the hierarchy in different the EC and EEA countries. Currently responsibility is assigned in different ways, using different principles and disparate terminology across the various EC and EEA countries. Clarifying the roles and responsibilities should include addressing the roles and responsibilities of licensees, owners, operators, contractors, sub-contractors, workers, etc. and their means and responsibility to work together for safety. This is particularly important as the existing employer / worker model reflected in the directives appears limited and one-dimensional given the complex network of players involved in some mineral extraction through drilling operations. In modifying the directive, the definitions / conventions established should be broad and flexible enough to accommodate the range or organisational situations and regulatory structures found across the EC and EEA countries. (Also see Sections 6.1.1.5 and 6.1.2.1).</td>
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<td>R9. The directive should outline the structure and / or functions to be undertaken by the regulator.</td>
<td>In the interviews there was discussion on the role of the regulator. It was pointed out that the directive currently does not cover this, however the proposed legislation does and this was seen positively. The regulators play a key role in ensuring the overall objectives of legislation are met and given that the regulator’s activities are not currently covered in the directive this should be addressed in any update. Such recognition can take the form of setting out high level expectations for the regulator. Details of regulator good practice can also be presented in guidance. This can cover the regulators responsibilities in enforcing their national legislation, especially in the regulation of major accident hazards (Also see, for example Sections 6.1.1.1 and 6.1.1.4.6).</td>
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<tr>
<td>R10. The directive should include a specific requirement on the responsible party to have a management system to implement the requirements of the directive and to drive continuous improvement.</td>
<td>The importance of having a management system, and the need for this aspect to be clearly outlined in the directive, came through clearly from the gap analysis. Directive 92/91/EEC and the framework Directive 89/391/EEC do not include an explicit requirement for employers to have a health and safety management system, however many of their requirements would be naturally implemented through a management system. Note that when implementing this recommendation it should also address the specific management system issues identified in the gap analysis. (Also see Section 6.1.1.4.1).</td>
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</table>
R11. The directive should ensure the need to identify (through the risk assessment process) critical equipment, activities and competencies in delivering safety, and should include a requirement for follow on verification of the critical equipment, activities and competencies along with a continuous improvement processes.

As stated earlier, the use of risk assessment was found to be common across the EU and EEA countries, however the opportunity for the directive to be enhanced to emphasise the requirement for risk assessment to define the “safety critical” aspects and their expected performance (to protect workers) to deliver an acceptable level of safety was identified.

The gap analysis identified “identification and analysis of tasks critical for the management of safety” as important. This same point also came through more broadly in the interviews along with the importance that the health and safety report needs to clearly identify what is “critical” for safety and the “assurance” / “verification” activities needed to demonstrate these aspects are functioning as desired. Demonstration that safety critical aspects are functioning as required provides regulators with confidence that worker safety is being protected.

It was found that not all countries have verification requirements embedded in their national legislation. Additionally it was found that the international operators’ good practice included independent verification. Therefore, when addressing this recommendation modifications to the directive should include the need for “independent verification” coupled with the expected level of independence (i.e. either 2nd or 3rd party).

It is acknowledged that Article 6, Para 3a of the framework directive alludes to the need to assure the outcomes of the risk assessment process.

(Also see Section 6.1.1.4.5).

R12. To remove elements in the current directive which would better fit in supporting guidance and standards documents (e.g. those outlined in Item 7 of Part B relating to sanitary equipment).

Through the interviews, stakeholders pointed out that the directive contains some prescriptive requirements that would be better located in supporting guidance.

Stakeholders also stated that it is generally better to include “none goal oriented” requirements in guidance or standards for the following reasons:

- This allows alternative innovative approaches to be taken that provide the same or a better level of safety. (Clearly this has to be demonstrated through risk assessment).
- Guidelines and standards can be updated faster than a directive or national legislation when there is learning from events, new technologies, etc. which highlight weaknesses in current standards or guidance and better approaches which should be applied in the future.

Any prescriptive elements put within supporting guidance documents must be underpinned by a legal goal setting basis in order to maintain their basis in law.

(Also see Sections 6.1.1.2 and 6.2.2.2).

1.5.3 Question 3 - Are Other Actions Needed?

Conclusion from this review: Yes.

Based on the findings of this review, DNV has concluded that the EC should takes actions, in addition to modifying Directive 92/91/EEC, to increase its effectiveness. The findings that lead to this conclusion are presented in Table 1.4. Recommendations for specific actions are made in Section 1.5.4.
Table 1.4 Findings leading to the conclusion that other actions are needed

<table>
<thead>
<tr>
<th>Finding</th>
<th>Discussion</th>
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<tbody>
<tr>
<td>National legislation implementing the requirements of Directive 92/19/EEC vary in some regards.</td>
<td>From the review it has been found that, although there is a lot of commonality, there are differences in the degrees to which legislation is goal oriented vs. prescriptive, how it is enforced, the boundaries of its applicability, etc. Some of these differences are due to the local understanding of where the directive is applicable when putting into National Legislation. If there were guidance in support of the directive which provides clarity on such matters then greater consistency could be achieved over time.</td>
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<td>To help address this (and other areas), stakeholders were asking for the EC to provide guidance in support of the directive.</td>
<td>It must be noted that the directive sets “minimum” requirements and there are areas where countries have clearly chosen to extend the application of their National Legislation implementing the requirements of the directive beyond these requirements. One example is where National Legislation seeks to protect the public, as well as workers, which responses to surveys shows to be the case in Cyprus, Luxembourg, Portugal, Slovenia, Sweden, UK and Norway. The examples above relate to areas where clarity is sought on “minimum” requirements.</td>
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<td>In other areas greater clarity would be desired by stakeholders. For example in the workplace boundaries. Here there is variability in where National Legislation which implements the requirements of Directive 92/91/EEC applies. For example Article 2 Item (b) defines the workplace as follows:</td>
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<td>“workplace shall mean the whole area intended to house workstations, relating to the immediate and ancillary activities and installations of the mineral-extracting industries through drilling, including accommodation, where provided, to which workers have access in the context of their work.”</td>
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<td>How this has been interpreted in different countries can be seen in Figure 1.1.</td>
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<td>Other areas where stakeholder interviewed were asking for guidance included:</td>
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<td>• Clarity on the boundaries and overlaps between Directive 92/91/EEC and other EU legislation. For example there is a clear overlap between Directive 92/91/EEC and the proposed legislation.</td>
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<td>• Guidance to support regulators to put in place regulatory systems and on what is good regulatory practice, in regard to implementing Directive 92/91/EEC in their country.</td>
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<td></td>
<td>At a national level providing guidance in support of legislation is common, for example the HSE in the UK have significant guidance that is available to industry and unions to support compliance with the UK legislative requirements and the protection of worker safety. For countries with limited resources the provision of guidance is more challenging. The EC does not currently have any guidance that support stakeholder to comply with the requirements of Directive 92/91/EEC.</td>
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<td>(Also see Sections 6.1 and Section 6.2.2.1).</td>
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### Finding
Countries implementing national legislation for the first time have a steep learning curve and would like support.

### Discussion
This finding relates primarily to the countries where a new mineral extraction industry is starting in their jurisdiction (for example Cyprus which has recently started offshore oil and gas exploration in its waters). It is also important for countries which are changing their legislation to better implement the requirements of the directive given potential growth in a mineral extraction industry (e.g. Ireland where they have a small offshore oil and gas exploration industry and where the exploration is moving into the more challenging environment west of the country) or are implementing goal oriented legislation for the first time, (for example Romania as one of the newer members of the EU).

In these cases there is an initial lack of experience and knowledge in the mineral extraction industry and/or goal oriented legislation for regulators, local industry and unions, (note that international companies tends to bring expertise from overseas).

Stakeholders expressed a desire for support from the EC to enable the countries with these needs to learn from other countries with more a larger and mature industry and greater experience with the directive.

(Also see Sections 6.1.3.2, 6.2.1.2 and 6.2.2.1).

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<table>
<thead>
<tr>
<th>Finding</th>
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<tr>
<td>The protection of workers would benefit from sharing learning and experience across EU and EEA countries.</td>
<td>Stakeholders can see a benefit in there being more sharing of learning and experience across EU and EEA countries. This was seen as helping:</td>
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<td>• Countries moving up the learning curve (see the previous finding).</td>
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<td></td>
<td>• More rapid implementation of actions across EU and EEA countries to better protect the safety of workers in this industry based on learning from experience, including, for example, from:</td>
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<td>o Accidents and near misses.</td>
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<td></td>
<td>o Initiatives.</td>
</tr>
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<td></td>
<td>o Implementation of new guidance, standards, etc.</td>
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<td></td>
<td>o Regulatory practices.</td>
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</table>

(Also see Sections 6.2.1.2 and 6.2.2.1).
Figure 1.1 “Workplace / geographical extent” covered by the national legislation that implements the requirements of Directive 91/92/EEC for offshore drilling extraction through drilling
1.5.4 Question 4 - What are the Actions that Should be Taken to Increase the Effectiveness of the Directive?

Specific recommendations for actions to enhance the effectiveness of the directive are presented in Table 1.5 along with the findings which lead to them.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Discussion</th>
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<tbody>
<tr>
<td>R13. The commission facilitates and supports the development of guidance documents in support of the directive which:</td>
<td>As discussed in Section 1.5.3 there is a demand from stakeholders for the EC to provide guidance in support of Directive 92/91/EEC. Other EU directives (e.g. Directive 2002/49/EC on environmental noise) include provisions that encourage the commission to develop guidelines (in certain areas) that help to aid the achievement of legislative goals; thus there is precedent for doing so in the context of the directive. It is recognised that this approach is more common in the sectorial based directives as opposed to those under the EU’s health and safety at work framework.</td>
</tr>
<tr>
<td>a. Clarify the scope of Directive 92/91/EEC, including:</td>
<td>Note an implication of clarifying guidance is that some EU and EEA countries may need to adjust scope of their national legislation that implements the requirements of Directive 92/91/EEC to areas not currently covered under their legislation.</td>
</tr>
<tr>
<td>i. Stating that all hazards to workers are to be covered, and defining “Occupational Health and Safety” and for “Major Hazards”.</td>
<td>From the review it is clear that the directive is interpreted as covering all hazards. With an update to the directive in regard to making explicit about requirements for “Occupational Health and Safety” and for “Major Accident” management (see Recommendation R6), it is seen that guidance to define these hazard types and to ensure that it is understood that they cover all hazards to workers would be of assistance to those interpreting the directive and its requirements. (Also see Section 6.1.1.3.2).</td>
</tr>
<tr>
<td>ii. The types of mineral extraction through drilling activity which are covered.</td>
<td>This should address the areas where this review identified differences in the types of mineral extraction covered by national legislation that implements the requirements of Directive 92/91/EEC. Guidance should answer questions such as: “Are all drilling activities covered?” “Is water a mineral?” “What about geothermal?” “Is taking a core sample mineral extraction?” etc. It is recommended that the scope is clarified for types of drilling where the hazards to people related to the drilling activity / well production are posed by the substance (mineral or other, e.g. water or CO₂) being extracted / stored or other substances which could be encountered. (Also see Section 6.1.1.3.3).</td>
</tr>
<tr>
<td>iii. The life cycle stages of the mineral extraction through drilling that are covered.</td>
<td>There are differences in which mineral extraction through drilling lifecycle stages are covered by national legislation implementing the requirements of the directive across EU and EEA countries. Exploration drilling and production are said to be covered in all EU and EEA countries, however seismic surveys, site construction and decommissioning / abandonment may or may not be covered. (Also see Section 6.1.1.3.4).</td>
</tr>
</tbody>
</table>
### Recommendation | Discussion
--- | ---
iv. The **workplace assets** covered (and, for what is not covered, what is the applicable directive(s)). | This relates to the mineral extraction through drilling workplace interpretation as discussed in Section 1.5.3 and illustrated in Figure 1.1. Guidance should answer questions such as: “Are pipelines associated with a production facility covered?” and “Is a gas plant miles away from the extraction site covered?”. Where the new guidance produced in response to this recommendation defines a workplace asset as not being covered by Directive 92/91/EEC, the guidance should go on to identify which worker safety directives apply to the workplace asset? *(Also see Section 6.1.1.3.6).*

v. The **boundary of the workplace** under the directive. | Clarifying guidance in this area is more important for offshore mineral extraction through drilling than onshore. From the review it was found that there are differences between countries in when a worker enters the workplace. For example for a worker working on an offshore rig and travelling their by helicopter, in some countries the workplace for which the national legislation implementing the requirements of Directive 92/91/EEC is deemed to start at the heliport check-in and covers helicopter travel, where as in other countries it starts at the helipad on the offshore rig.

Note for onshore it was clear that inside the site boundary is the workplace. *(Also see Sections 6.1.1.3.4 and 6.1.1.3.6)*

b. **Assist regulators:**

i. In what to do to **setup and operate a legislative system** to help administer the national legislation that implements the requirements of the directive. | As discussed in Section 1.5.3, stakeholders new to a mineral extraction through drilling industry or new to a goal oriented regulatory regime expressed a desire for added assistance to help them up the learning curve. Having guidance in this area would be of assistance. This could include a route map in implementation and guidance on good practices (for example for a regulator it could explain how to design and structure inspection on a risk basis). *(Also see, for example Sections 6.1.2.2, 6.1.3.1 and 6.2.2.1).*

ii. To undertake their role and to put in place activities which support **building a good safety culture and drive continuous improvement.** | In the interviews there was significant discussion on activities that drive good safety beyond the requirements of legislation. The countries with mature major hazard drilling extraction through drilling industries presented many activities they undertake that support this goal. If the EC pulled together examples of good practice to share with regulators, this would provide benefit.

There were 2 key elements that were expressed by stakeholders as important in developing a good safety culture and driving improvement. As such this guidance should cover **joint stakeholder collaboration** (regulators, industry and unions) and having a **continuous improvement process** (a plan-do-check-act (PDCA) cycle) which includes measuring and monitoring the safety performance of the industry. *(Also see Sections 6.1.1.2, 6.1.1.4, 6.1.3.1, 6.1.3.3, 6.2.1.2, and 6.2.2.1).*

c. Set-out the **information** that it is expected should be made available for a **regulator** to undertake their role. | The review illustrated some variations exist in what documentation and information is made available and on what basis and frequency between EU and EEA countries. Guidance on the types of information that industry can supply to regulators and what it aids regulators in gaining assurance over would assist. This should cover the lifecycle stages including; the design / build stage, drilling activities, production, etc. *(Also see Sections 6.1.2.1 and 6.1.1.4.6)*
### Recommendation | Discussion
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d. **Clearly defines terms employed** e.g. “the employer”. | This recommendation comes from the finding that there are different interpretations of the directive in its transposition into national legislation. Having good definitions of terms will help in gaining commonality across EU and EEA countries. *(Also see Section 6.1.1.5).*
e. **Describe the interfaces between the directive and other directives / legislation.** | Primarily the stakeholders raised the issue of how Directive 92/91/EEC overlaps with the proposed legislation on safety in the offshore oil and gas industry. Additionally they raised the need to understand the borders between and overlaps amongst all directives that affect their industry. Guidance on this would be of assistance. Such guidance should also explain how directives work together where there are clear overlaps. This is of specific relevance for Directive 92/91/EEC and the proposed legislation for offshore oil and gas. *(Also see Sections 6.1.1.3.2, 6.2.1.2 and 6.2.2.2).*
f. **Explain the process from risk identification through to gaining assurance that risks are being appropriately managed, (including the importance of identifying what is “critical” to managing safety)** | For the countries with mature oil and gas industries which have adopted a largely goal oriented legislative framework, the stakeholders were familiar with the process from risk identification through to gaining assurance that risks are being appropriately managed. These countries generally took a broad view on using the process to identify what is critical in managing the risks of mineral extraction through drilling activity, considering hardware, systems and processes, and culture and competencies (plant – process – people). In these countries the assurance requirements are consequently broadly focused. In less mature countries, or those new to goal oriented legislation, the understanding of this process to deliver assurance over the broad range of aspects critical to managing the risks could be enhanced. This would assist in delivering protection for workers by helping not only ensuring good risk assessment but also ensuring verification and inspection focused on the broad range of aspects (plant – process – people) that are critical to managing the risks. Thereby going beyond a physical inspection of hardware. From the interviews the importance of risk assessment to identify what is “safety critical” also came through. It was stated that it is these aspects, (tasks, equipment, competencies, etc.) that the safety and health document needs to clearly identify and the “assurance” / “verification” activities needed to demonstrate they are working as desired. Demonstration that safety critical aspects are functioning as required provided regulators with confidence that worker safety is being protected. Guidance which explains the link from risk identification, to risk assessment, to identifying equipment, activities or competencies critical to maintaining the integrity of any facility engaged in mineral extraction through drilling activities (and defining their functionality), to inspection and verification activities would therefore assist stakeholders. This should all be in the context of a safety and health management system. It is noted that this is achieved to some extent in the commission document “Guidance on risk assessment at work” (EC, 1996) developed in support of the framework directive (Directive 89/391/EEC). *(Also see Section 6.1.1.4.1, 6.1.1.4.2, 6.1.1.4.4 and 6.1.1.4.5).*
### Recommendation g. Outline good practice for workforce engagement.

There were a range of approaches to engage the workforce in safety both at a facility level and at a national level.

For example there were different approaches followed in regard to the safety representative. A safety representative may represent the workforce for safety only on a full time basis, or have the responsibility while also needing to undertake their normal job, or they represent workers on all issues. What was clear from interviews was that:

- Where the representative also has a day job they can find it challenging to be as active on safety as some stakeholders would like. Examples were given where they needed to undertake training for the role when they are “off work”.
- Where safety representation is part of the worker representation role for an individual, safety was said to be lower on their agenda than, for example, pay and working conditions.

There are other challenges for the offshore environment where the working patterns (e.g. 12 hour shifts and 2 weeks on – 2 week off shift pattern) also make it challenging for safety representatives to attend and contribute on an on-going basis.

Given differences it would be good for the Commission to produce guidance on good practices for engagement (including guidance on good practices for the role and responsibilities of safety representatives building on the goals outlined in Articles 10 and 11 of Directive 89/391/EEC).

(Also see Section 6.1.3.3)

### R14. The Commission should consult internally with those responsible for protecting the general public to determine if there should be guidance on the appropriateness of countries extending the scope of national legislation to cover the general public.

Protection of the general public is clearly outside the scope of Directive 92/91/EEC. It is also clear that the general public are exposed to risks from mineral extraction through drilling activities. This was illustrated in interviews with German stakeholders where they discussed the risks from the pipelines carrying gas containing H₂S between onshore wells and processing plants.

Responses from some countries indicate that they have extended the scope of their legislation implementing the requirements of Directive 92/91/EEC to include protection of the general public (as well as the workers), see Figure 1.2.

Given the above it is recommended that the Commission should consult internally with those responsible for protecting the general public. They should determine if there should be guidance on the appropriateness of countries extending the scope of national legislation to cover the general public and that this should consider not only the well site, but also the associated facilities covered under the directive.

(Also see Section 6.1.1.3)
Recommendation | Discussion
--- | ---
R15. The Commission should investigate what further role it could take and how it can work with stakeholders to agree relevant guidelines, practices and technical standards to be used across EU and EEA countries. | There is guidance that is available to the industry. The source and level of the guidance varies by country, see Figure 1.3. An issue raised in interviews was that the “practices and standards” promoted by regulators across the EU and EEA countries vary, and the overlap in the regulator approved standards between countries is very limited.

For industry, demonstrating compliance with national legislative provisions (including those stemming from the directive) in the various EC and EEA countries often involves fulfilling the requirements of defined practices and technical standards (e.g. BS, Norsok, OGP, etc.). The primary advantage of using technical standards is that they can be reviewed and improved (based on learning / experience) more quickly than the national legislation. From the interviews it was learnt that the technical standards adopted across the countries vary and that this situation can lead to barriers / inefficiencies in working across borders. Particularly for offshore mobile rigs.

The directive (in its current format) does not make reference to any guidelines, practices or technical standards for use in the mineral extractive industries. Whilst it is evident that there are specific reasons that the practices and standards that apply vary (e.g. differences in geography and thus risk profile; artic versus the Mediterranean environments), developing more consistency (i.e. harmony) on the guidance, practices and technical standards used across the EU and EEA would help level the regulatory environments and assist industry in complying. Additionally this will enable companies to operate more easily across EU and EEA country borders.

The Commission could take a role in working with stakeholders to agree relevant technical standards to be used across EU and EEA countries, at least for a core set of standards.

The Commission supporting / facilitating the development of harmonised technical standards is not without precedent. It currently does so and a number of harmonised standards (EC, 2012b) have been developed which are presently in use for a number of economic sectors/products; none of which specifically relate to the mineral extractive industries.

The use of harmonised standards (such as harmonised EU standards under the Machinery Directive 206/42/EC) would increase the working efficiency of operators working in more than one country. It will also assist in developing and ensuring consistent working practices the across the EU and EEA.

The Machinery Administrative Cooperation Group (AdCo) and the EU Machinery Directive Interest Group and EU Advisory Committee on Safety and Health standardisation could assist with this recommendation.

(Also see Section 6.1.1.2, 6.1.3.1 and 6.2.1.2).

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3 It is noted that there is European harmonised standard for pressure equipment and this will apply to any pressure equipment used in the mineral extractive industries.

4 A harmonised standard is a European standard elaborated on the basis of a request from the European Commission to a recognised European Standards Organisation to develop a European standard that provides solutions for compliance with a legal provision. Such a request provides guidelines which requested standards must respect to meet the essential requirements or other provisions of relevant European Union harmonisation legislation.
**Recommendation** | **Discussion**
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**R16.** The Commission should look to how it can support putting in place *engagement forums* for learning and a **continuous improvement loop** that supports the maintenance and improvement of supporting materials including:
2. Technical Standards.

The review heard from stakeholders that having a continual improvement loop in place to maintain and update all aspects of their national legislative environment was a key aspect to the success in protecting the safety of workers in the industry.

Also it is clear that updating guidance and standards can be achieved more quickly than updating legislation.

Continuous improvement loops (systems and processes) help can make sure the guidance and standards are updated promptly to reflect learning from experience and accidents. This should include developing *engagement forums* between the primary stakeholders (regulators, industry and unions) where learning (e.g. from accidents, inspections, etc.) is shared and used as input to the continuous improvement activities. It is noted that this has started for one stakeholder group (the regulators) with the recently created Offshore Oil and Gas Authorities Group (EU, 2012).

(Also see Sections 6.1.1.2, 6.1.2.2, 6.1.3.2, 6.1.3.3, 6.1.2.1 and 6.2.1.2).

**R17.** The Commission should investigate what role it could take and how it can support *regulators* in an early phase of implementing their national legislation for the requirements of Directive 92/91/EEC to help them to **build the capabilities** and experience they require to effectively regulate the industry.

From the review it was seen that where there is a significant industry then the regulators have significant resources to develop/update, roll-out, support and enforce the legislation that implements the requirements of Directive 92/91/EEC in their country.

For the countries with new / small oil and gas industry it was found that their regulatory resources and their knowledge of the industry, its risks and how to manage the risks was more restricted. In these countries the regulator stakeholders would like to get support to build their capabilities. The same need to build capability was also expressed for the countries changing to goal oriented legislation.

It is seen as important that regulators need to build and have the capabilities to successfully regulate the industry, and thereby to help ensure worker safety.

For those needing to build capabilities, support from the Commission to build capabilities such that they can sustainably and successfully deliver the requirements of Directive 92/91/EEC would be beneficial.

(Also see Section 6.1.1.2, 6.1.2.2 and 6.2.1.2).
Figure 1.2 “Who is protected” by the national legislation that implements the requirements of Directive 91/92/EEC by population groups
Figure 1.3 Availability of Guidance to Support Industry to comply with National Legislation Implementing the Requirements of Directive 92/91/EEC
2 INTRODUCTION

2.1 Background

The European Union (EU) seeks to a) protect the safety and health of workers and b) secure improvements in the working conditions of workers across all its member states. It does so by enacting directives that govern all activities relating to health and safety at work (and thus protection of workers). The authority to enact directives in this field stems from article 153 of the Treaty on the Functioning of the European Union.

The EU has enacted a wide range of directives that set out minimum health and safety requirements for the protection of workers. Directive 89/391/EEC is the principal directive in this field. It is the EU’s health and safety at work “framework directive” and its aim is to introduce measures to encourage improvements in the safety and health of workers at work. It applies to all sectors of activity, both public and private, (excluding some specific public service activities, e.g. the armed forces and the police). It lays down general principles concerning the prevention and protection of workers from various sources of risk.

Under Directive 89/391/EEC there are a series of individual directives. The individual directives contain more detailed provisions for specific areas aspects of health and safety at work. Directive 89/391/EEC with its general principles continues to apply in full to all the areas covered by the individual directives (i.e. despite the fact that the latter individual directives are subordinate to the framework directive, they both apply in equal measure and should always be read in tandem).

Directive 92/91/EEC, adopted in 1992, concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling, is one of the individual directives under Directive 89/391/EEC. The design of the legislative framework of EU health and safety directives, in particular the relationship between the framework and individual directives is the focus of Section 4.

In addition to developing legislation in the area of health and safety at work, a range of EU supported institutions exist, at both the macro and micro level, to help support the realisation of the overarching goals of legislation. Macro level organisations include the European Agency for Safety and Health at Work (EU OSHA) who takes a broad-ranged view and aim to support all industry sectors and business sizes. At the micro level, there are smaller, more targeted groups that focus on specific industry sectors / issues. In the specific case of the mineral-extracting industries through drilling industry, there is the Advisory Committee on Safety and Health at work (ACSH) Standard Working Party (SWP) for the mining and other extractive industries. This a tri-partite body that includes representatives from the three key stakeholder groups namely national governments, trade unions and employers’ organisations. There are also a number of Ad-Hoc Working Groups (AHWG’s) that form a part of the ACSH SWP.

The EC wishes to analyse how the Directive 92/91/EEC is transposed and implemented by Member States, and evaluate how effective the national legislation is at protecting safety and health of workers in mineral extraction through drilling industry in the EU member states and other countries of the European Economic Area (EEA). The outcome will be used to inform the EU about any changes that may be required to the directive, or to provide justification if no such changes are needed.

The EC has commissioned Det Norske Veritas (DNV) to carry out this study. The present document is DNV’s Report.
2.2 Drivers for the Review
The following were the drivers for the review to be undertaken at this time:

- The accession of additional Member States to the European Union since the last review (in 2009).

- Oil and gas drilling and production activities in:
  - New areas where exploration and / or production activities are taking place for the first time (e.g. off Cyprus).
  - In more complex environments (e.g. West of Shetland and the Arctic), i.e. the change from “easy oil” to the exploration for and extraction of oil and gas from more difficult environments.

- Increased attention on the risks from mineral extracting industries through drilling due the Deepwater Horizon accident in the Macondo oilfield which killed 11 workers and resulted in an uncontrolled release of oil into the Gulf of Mexico lasting for just under 3 months.

- The proposed legislation from the EC that covering major accidents in offshore oil and gas prospection, exploration and production activities.

Following the Deepwater Horizon accident the European Commission published a communication titled; “Facing the challenge of the safety of the offshore oil and gas activities” (COM (2010)560, European Commission, 2012). This communication identified five main areas where “action is needed to maintain the safety and environmental credentials of the EU:

- thorough licensing procedures,
- improved controls by public authorities,
- addressing gaps in applicable legislation,
- reinforced EU disaster response, and
- international cooperation to promote offshore safety and response capabilities worldwide.”

2.3 Objectives of the Review
The main objectives for the review are as follows:

1. To analyse and evaluate the practical application of national legislation related to safety and health at work in mineral extraction through drilling.

2. To compare the various ways in which Directive 92/91/EEC has been transposed and implemented by the Member States.

3. To examine the impact the Directive 92/91/EEC has had in Member States.

4. To review the provisions of Directive 92/91/EEC following the Deepwater Horizon accident, and indicate if changes are required (or justify requiring no changes).

5. To consider what changes are needed to Directive 92/91/EEC to ensure continuity with the proposed European legislation on safety in the offshore oil and gas industry.

6. To analyse if other options could be used to increase the effectiveness of the Directive.

7. To support the preparation of the Analytical Document for the Social Partner consultation that will be needed if changes to the Directive are envisaged (if necessary).
2.4 Scope of the Review

This section aims to define the boundaries of the study, to clarify what is included and what is excluded. A key aspect of the study is to clarify how Directive 92/91/EEC has been interpreted by Member States and EEA countries, and therefore the boundaries of the study are intended to be flexible enough to capture any variation in national implementation.

The scope covers safety and health at work in the mineral extraction through drilling industries in Member States and EEA countries, defined as follows:

- “Safety and health” – refers to those measures taken to safeguard the safety and health of workers from various hazards (e.g. major accidents, occupational accidents or occupational causes of ill health).

- “Work” - refers to activities undertaken at the place of work, including associated accommodation and transport.

- “Mineral extraction through drilling industry” - this study covers only mineral extraction through drilling, with a particular focus on offshore oil and gas. It considers the full exploration and production life cycle, i.e. exploration drilling, construction of production facilities, production drilling, processing and export, and decommissioning of facilities.

- “Europe” - this study covers the 27 EU Member States and 3 EEA countries.

The study excludes:

- Accidents that result damage to property, business or the environment, other than where these also result in potential or actual harm to people.

- Mineral extraction using other extraction methods, e.g. coal mining.

- Mineral extraction through drilling activities and legislation in other countries. This exclusion covers the neighbouring countries of Turkey, Russia and North Africa, and the 7 West Balkan countries; Albania, Bosnia and Herzegovina, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Serbia and Kosovo. It is, however, recognised that European emergency response organisations and resources may assist in responding to accidents in these countries and their waters, and that such accidents may have an environmental impact on European waters and coast lines.

The specification requires the review to identify, analyse, and assess:

- The specific prevention approaches adopted by member states and by undertakings and public sector bodies, e.g. organisational measures.

- The balance of regulatory attention given to major hazard control measures compared to conventional occupational health and safety systems.

- The impact of these specific prevention approaches on all levels of safety and health protection at work.

- The difficulties and the positive effects encountered by undertakings and public sector bodies in connection with the practical application of legislation on safety and health at work.

- Any unexpected negative or positive side effects resulting from the practical application of legislation on safety and health at work.
In all cases effects on small and medium-sized enterprises (SMEs) and self-employed workers must be considered. In addition it was required that the analyses must highlight the main differences among the 27 Member States and examine the potential consequences on the safety of offshore operations across Europe.

2.5 This Report

This report is divided into 5 sections with a set of supporting appendices. A brief summary of each section is provided below:

- **Section 1: Executive Summary** – Briefly overviews purpose of the review and summarises the main findings and recommendations.
- **Section 2: Introduction** – Introduces the review including the drivers for, the objectives of and the scope of the review.
- **Section 3: Approach** – describes the approach and the methodologies used in the review and discusses how the work progressed.
- **Section 4: Directive 92/91/EEC** – provides an overview of the directive and its relationship with other existing directives and the proposals for a legislation on safety in the offshore oil and gas industry proposed by the EC.
- **Section 5: Overview of Industry Activity** – provides an overview of the mineral extraction activities throughout the EU and EEA countries.
- **Section 6: Findings and Discussion** – presents and discusses the findings of the review.
- **Section 7: Recommendations** – presents recommendations for the EC’s consideration.

The appendices present the information gathered, documentations / materials produced and analyses undertaken as part of the review.

2.6 Acknowledgements

DNV would like to thank the many people and organisations that input to this review. This includes thanking:

- All those in different organisations who assisted in identifying the right people to interview and to complete the survey.
- The interviewees for their time and effort, not only for preparing for and participating in the interviews, but also for pre-preparing detailed written responses, collecting relevant background materials, and by supporting with translation from their own language into English.
- All those who completed the survey.
- The Ad Hoc Working Group for their time and critique of all aspects of the work and its leadership by the EC. Their challenge and critique has helped improve the robustness and completeness of the review.

The study could not have been completed without this support, thank you.
3 APPROACH

3.1 General Approach

The overall approach is presented in Figure 3.1. In order to structure the work and promote a systematic approach, the activities started by expanding the objectives into a list of questions to answer. The study has answered them by using the following techniques:

- **Gap analysis** of the directive against the findings from selected major accidents.
- **Semi-structured interviews** with stakeholders in selected countries.
- **Survey** of a wide group of stakeholders in all relevant countries.
- **Analysis of industry activity and its safety performance** from published data, information gained from the interviews and survey to produce a simple overview of the mineral extraction through drilling in EU and EEA countries.
- **Triangulation** of the findings from the above activities.

![Figure 3.1 Overview of the Review’s Approach](image)

3.2 Questions to be Answered

In order to ensure that the review addressed the needs of the Commission, the objectives were refined into a list of 55 questions which the study aimed to answer, see Appendix I. The questions were confirmed with the Commission and its Ad Hoc Working Group (AHWG) as an appropriate refinement of the study scope. They informed the other activities, and specifically the development of the semi-structured interview question set.
3.3 Gap Analysis

The gap analysis was conducted to learn from real events. It compared the directive with lessons learned from selected major accidents, to identifying areas not, or not fully, addressed by the directive and thus possible areas for improvement.

The gap analysis process involved the following activities:

- **Identification of major accidents** with sufficient information on their root causes and learning.
- Undertake and report the **gap analysis**.

The team identified a range of potential major accidents to analyse and then reduced them to those which were more recent (i.e. those which occurred since the directive came into force) and those where there are public domain documents, for example accident investigation reports, with sufficient information to allow the gap analysis. The following major accidents were identified as suitable for the analysis:

- P36 semi-submersible explosion and capsize, Brazil, 2001; 11 fatalities.
- Mumbai High North collision-induced riser fire, India, 2005; 22 fatalities.
- Usumancita collision-induced wellhead leak, Mexico; 2007; 22 fatalities.
- Montara blowout, Australia, 2009; 0 fatalities.
- Deepwater Horizon blowout, USA, 2010; 11 fatalities.

No EU and EEA mineral extraction by drilling industry multiple-fatality accidents with sufficient information to allow the gap analysis since the directive was introduced were identified. The last high-fatality accident in Europe was Piper Alpha (1988), however its many lessons are already reflected in oil and gas offshore safety legislation present in EU and EEA countries. Other accidents (e.g. Brent Bravo in 2003 with 2 fatalities), and significant near-misses (e.g. Gullfaks C in 2010 and Elgin in 2012 where there were no fatalities), could not be analysed as there were no causal documents with sufficient detail available in the public domain. No recent major accidents in onshore drilling were identified.

The key causal factors and recommendations reported were compared with the provisions of the Directive 92/91/EEC to identify gaps. The analysis and its conclusions are presented in Appendix II.

3.4 Semi-structured Interviews

To learn from those regulating and delivering safety in the industry, and other interested parties, interviews were undertaken with relevant stakeholders. The stakeholder interview process involved the following activities:

- **Identification of stakeholders** to interview (and arranging interviews).
- Development and testing of a **semi-structured interview question set**.
- Arranging, undertaking and documenting **interviews**.
- Writing an **overview of the mineral extraction through drilling activity in Europe**.
The review identified stakeholders from member states and EEA countries. The stakeholder fell into the following groups:

- Government organisation / regulators.
- Trade associations / companies.
- Unions / worker representatives.
- Non-Governmental Organisations (NGOs).

Engagement with stakeholders was via interviews and the survey. Interviews provide a very rich source of relevant information, however, they are time-consuming to arrange, conduct and document. For this reason, it was decided that the interviews would be limited to specific stakeholders in selected counties. The countries where stakeholders were to be interviewed were defined and agreed with the Ad Hoc Working Group based on the magnitude and maturity (current and future) of their mineral extraction through drilling activity, especially their oil and gas industry.

Stakeholders were identified starting with the Members of the Commission’s Energy Standard Working Party (SWP). This was supplemented with other contacts from the members of the Ad Hoc Working Group and DNV, along with use of the web. A full List of Stakeholders that were invited to be involved in the review is provided in Appendix II.

A semi-structured interview question set was developed based on the “questions which the study aimed to answer” (Appendix I). It was reviewed by the Ad Hoc Working Group and was tested in an interview with the Health and Safety Executive in the UK before being finalised, see Appendix IV.

The interviews, thirty-six in total, were undertaken over a number of months with the majority completed in the period from mid-April 2012 to mid-July 2012. In each interview, the semi-structured interview question set was used to provide structure, and stakeholders were invited to respond directly to the questions. Depending on the specific knowledge and role of the stakeholders along with the number of people present, interviews used either the first 5 questions as general themes (which allowed more open discussion) or the subsequent more specific questions (which went into more depth).

The written record of the meeting was returned to the interviewee(s) for review, comment and confirmation that it correctly reflected the discussion. All these interview notes are presented in Appendix V as approved by the interviewees.

In addition to interviews with stakeholders there was a meeting where the operators and the trade associations met together to present and contrast the regulatory regimes. Although this session did not use the semi-structured interview question set it covered the same subject areas and enabled discussion and comparison between countries. It is documented and presented with the interview notes in Appendix V.
3.5 Survey

It was not possible to interview stakeholders in all EU and EEA countries, therefore to learn from those regulating and delivering safety in countries where interviews were not undertaken, and to help in providing more specific comparison between countries, a survey was undertaken. The survey process involved the following activities:

- **Development** of the survey.
- **Issue of the survey and collection of responses.**
- **Analysis** of responses.

The survey was developed based on the responses received to the interviews. From the interviews specific areas to gain clarity on or to investigate further were identified. The survey was developed to investigate these points. The draft was shared with the Ad Hoc Working Group for testing / comment. Their feedback was incorporated and the survey was issued electronically to all stakeholders. The Survey is presented in Appendix VII.

A main focus of the survey was to identify similarities and differences between countries and stakeholders. The responses were compiled into a database and were analysed. The analysis is presented in Appendix VIII.

3.6 Analysis of Industry Activity and Its Safety Performance

To inform the findings and recommendations and overview of the mineral extraction through drilling activities was developed. It is important to understand the input from different stakeholders against the current and potential future mineral extraction through drilling activities in their county. Similarly it is important to understand the level of activity across these EU and EEA countries when developing recommendations. The overview was developed through the following activities:

- **Collection of materials** on industry activities and its safety performance from public sources, via interviews and from the survey.
- **Review and analysis** of the activities and safety performance data.
- **Writing the overview** of the mineral extraction through drilling activity in EU and EEA countries and its associated safety performance.

The output form is the overview of the mineral extraction through drilling activity in EU and EEA countries and its associated safety performance presented in Appendix VI.

3.7 Triangulation

It is important to compare the findings from the three different methods (gap analysis, interviews and the survey) employed. Triangulation of these findings has allowed the team to identify which findings are supported by the output of more than one of the different methods.

Bringing together the findings from the different methods (see Section 5) provided the basis from which the recommendations are developed (see Section 7).
4 EU HEALTH AND SAFETY AT WORK LEGISLATION

4.1 Introduction

This section provides an overview of EU legislation in the field of health and safety at work. It outlines the rationale and basis for legislative action in this area by the EU as well as introduces the key item of legislation in this field, namely Directive 89/391 (the framework directive for the health and safety of workers). A brief discussion on the design of the legislative framework is also given, with specific emphasis on the relationship of the framework directive to other subordinate directives, particularly Directive 92/91/EEC (the key focus of this work). The section ends with a discussion of the relationship between Directive 92/91/EEC and the proposed legislation.

4.2 Directive 89/391/EEC (Framework Directive)

The European Union (EU) seeks to protect the safety and health of workers and secure improvements in the working conditions of workers across all its member states. It does so by enacting directives (see text box for additional information) that govern all activities relating to health and safety at work (and thus protection of workers). The authority to enact directives in this field stems from article 153 of the Treaty on the Functioning of the European Union.

The EU has enacted a wide range of directives that set out minimum health and safety requirements for the protection of workers. Directive 89/391/EEC is the principal directive in this field. It is the EU’s health and safety at work “framework directive” and its aim is to introduce measures to encourage improvements in the safety and health of workers at work. It applies to all sectors of activity, both public and private, (excluding some specific public service activities, e.g. the armed forces and the police). It lays down general principles concerning the prevention and protection of workers from various sources of risk.

Under Directive 89/391/EEC there are a series of individual directives (see Figure 4.1). The individual directives contain more stringent and / or specific provisions for specific areas. Directive 89/391/EEC with its general principles continues to apply in full to all the areas covered by the individual directives (i.e. despite the fact that the latter individual directives are subordinate to the framework directive, they both apply in equal measure and should always be read in tandem). Directive 92/91/EEC is one of the individual directives under Directive 89/391/EEC.
It is relevant to note that Directive 89/391/EEC (the framework directive) requires advances in technology to be taken into account and used to deliver improved levels of protection with regards to workers’ health and safety over time. Therefore, it is expected that the minimum standards will evolve over time (in line with technological advances).

4.3 Directive 92/91/EEC

Directive 92/91/EEC addresses issues central to safeguarding the health and safety of workers in the mineral extraction through drilling industry. It is a “minimum directive”, meaning it outlines the minimum requirements (i.e. a threshold) that must be met within all EU member states. If member states wish they can enact legislation that exceeds the requirements of the directive.

Directive 92/91/EEC consists of 12 articles. For the most part, the articles (and supporting annexes) are written in terms of broad goals to be achieved (i.e. as functional requirements), although there are a number that can be interpreted as being prescriptive in nature. The articles include provisions that address the following issues (not exhaustive list):

- Requirement for risk assessment (conducting the assessment, demonstrating that the risks are managed and documenting the results).
- Proper design of the workplace to control hazards.
- Control of flammable atmospheres.
- Maintenance of equipment (particularly safety equipment).
- Suitable well control.
- Escape considerations and emergency response.

<table>
<thead>
<tr>
<th>Directive 92/91/EEC Articles</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General provisions.</td>
</tr>
<tr>
<td>2. Definitions of terms/concepts.</td>
</tr>
<tr>
<td>3. Employers' obligations.</td>
</tr>
<tr>
<td>4. Protection from explosive atmospheres.</td>
</tr>
<tr>
<td>5. Escape and rescue</td>
</tr>
<tr>
<td>6. Warning and alarm systems.</td>
</tr>
<tr>
<td>8. Health surveillance.</td>
</tr>
<tr>
<td>9. Worker consultation.</td>
</tr>
<tr>
<td>10. Minimum requirements for safety and health.</td>
</tr>
<tr>
<td>11. Adjustments to the annexes.</td>
</tr>
<tr>
<td>12. Final provisions.</td>
</tr>
</tbody>
</table>
4.4 Relationship between Directive 92/91/EEC and the Proposed Legislation

Following the Deepwater Horizon accident in the Gulf of Mexico, the EC proposed legislation that “establishes minimum requirements for preventing major accidents and limiting the consequences of major accidents in offshore oil and gas prospection, exploration and production activities” (EC, 2012a). Offshore oil and gas prospection, exploration and production are a subset of mineral extraction through drilling, and major accidents are a subset of the sources of health and safety risk for workers. Given this it would appear that there is an overlap between Directive 92/91/EEC and the proposed legislation. To address this, the draft of the proposed legislation explicitly states:

“The provisions of this Regulation shall apply without prejudice to relevant Union legislation, in particular concerning health and safety of workers at work, notably Council Directives 89/391/EEC and 92/91/EEC.”

It is useful to seek to understand the boundaries and overlap between the directive and the proposed legislation in terms of the industry, accident and consequences types they cover:

- The **industry types** the directive and proposed legislation apply to are presented in Table 4.1. This shows that Directive 92/91/EEC and the proposed legislation are both applicable to the “offshore oil and gas mineral extraction through drilling industry”.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Offshore oil and gas mineral extraction through drilling industry</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Onshore oil and gas mineral extraction through drilling industry</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>All other mineral extraction through drilling industries</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>All other industries, (excluding specified public service activities)</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

- The **accident types and consequence types** the directive and the proposed legislation cover are presented in Table 4.2. It is important to remember that some major accidents with a potential safety impact will also have a potential environmental impact; this is depicted in Figure 4.2 (for major accidents only).

<table>
<thead>
<tr>
<th>Accident and Consequence Types</th>
<th>Directive 92/91/EEC</th>
<th>Proposed Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational Illness</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Occupational Safety Accidents (Non-Major Accident)</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Major Accidents</td>
<td>… with potential worker health &amp; safety impact</td>
<td>✓</td>
</tr>
<tr>
<td></td>
<td>… with potential environmental impact</td>
<td>✓</td>
</tr>
</tbody>
</table>
If a major accident only has the potential to impact the environment, then from Table 4.2 it is clear under which legislation the major accident falls:

- Major accidents with a potential environmental impact will come under the proposed legislation.

For a major accident with potential safety impacts (i.e. the red circle including the overlap in Figure 4.2), how Directive 92/91/EEC and the proposed legislation work together needs further clarification. For such potential major accidents, it could be said that all the causal and all the safety consequence aspect are managed under both the national legislation that implements the requirements of Directive 92/91/EEC and the proposed legislation, and the additional environmental consequence aspects only come under the proposed legislation. This is depicted using a bowtie diagram format in Figure 4.3.

**'Major accident' means, in relation to an installation or connected infrastructure:**

(a) an explosion, fire, loss of well control, release of oil, gas or dangerous substances involving, or with a significant potential to cause fatalities, or serious personal injury,

(b) an incident leading to serious damage to the installation or connected infrastructure involving, or with a significant potential to cause, fatalities, or serious personal injury

(c) any other event leading to death or serious injury to five or more persons on the offshore installation from which the source of danger occurs or is engaged in an operation on or in connection with the installation or connected infrastructure; or

(d) any major environmental incident resulting from paragraphs (a) to (c).

Where an installation is normally unattended, paragraphs (a), (b) and (d) shall apply as if that installation were attended.

NB The above definition is based on the version of the proposed legislation available at the time this report was written.

(EC, 2012a)
Figure 4.3 Illustration, Using a Bowtie Diagram, to Show what Aspects of the Accident Come Under Which Legislation for a Major Accident with Both a Potential Safety and Environmental Impact
5 OVERVIEW OF INDUSTRY ACTIVITY

This section is provided to give the reader some details about the mineral extraction through drilling industry in EU and EEA countries to give some of the context against which the findings are discussed, the conclusions drawn and how the recommendations are developed. In order to make judgements on the appropriateness of different possible recommendations it is logical to consider them against the level of activity in EU and EEA countries. Additional information on activity is presented in Appendix VI. The first part identifies the types of mineral extraction through drilling taking place. This is then followed by more details on oil and gas activities by EU and EEA countries.

5.1 Forms of Mineral Extraction through Drilling in EU and EEA Countries

From the survey a range of activities were identified which individual countries saw as being “minerals extracted through drilling”. Figure 5.1 shows the number of EU and EEA countries undertaking each of the different activities identified. Some may judge that not all the activities involve “extraction” of minerals, for example:

- Storage of carbon dioxide which involves putting the mineral (CO\textsubscript{2}) into the ground.
- Geothermal where heat in the mineral (water) is extracted and the mineral (water) returned.

The common thread that exists between all these activities is that they involve drilling.

![Chart showing the number of countries involved in identified mineral extraction activities](chart.png)

**Figure 5.1 Number of Countries involved in the identified Mineral Extraction Activities.**
The mineral extraction activities identified take place both on land and offshore. Generally speaking, the activities that take place offshore are hydrocarbon related (extraction and storage), although carbon (capture and) storage was also discussed as an offshore activity (either happening today or under consideration for the future).

5.2 Oil and gas exploration and production activity and trends

Oil and gas extraction arguably poses the greatest risk of the mineral extraction through drilling taking place in EU and EEA countries. Given this, together with the fact that offshore oil and gas extraction is a focus for this work, additional information on the current level of activity for oil and gas drilling and production is presented in this section.

Oil and gas extraction through drilling is currently widespread in the EU and EEA countries. Sixty per cent of the EU and EEA countries are currently involved in oil and gas extraction (i.e. production). This percentage increases when including countries which are currently exploring for oil and gas with the hope of future oil and gas production.

5.2.1 Production

The total production of crude oil and natural gas in the EU and EEA countries in 2010 was 432 million tonnes of oil equivalent (Eurostat Statistics Database, 2012). Natural gas accounted for 58% of production and crude oil 42%. The overall trend in production is declining, with total production in 2010 at only 75% of that in 2000, although still 10% higher than it was in 1990. The distribution of production by country is presented in Figure 5.2.

It is estimated that 16% of the production is from onshore fields and 84% from offshore fields. The onshore production is mainly in the Netherlands, Romania, Germany and Italy and the offshore production occurs mainly in Norway, the UK, the Netherlands and Denmark.
5.2.2 Drilling

There are no comprehensive statistics on well drilling in Europe. Table 5.1 presents forecast data for offshore drilling in EU and EEA waters developed by World Oil (World Oil, 2012). It shows that in 2012, Norway and the UK are expected to account for over 80% of oil and gas exploration and production drilling activity in EU and EEA countries. This data was consistent with forecasts received in interviews, which also mentioned additional onshore drilling in the UK, Poland and France.

Table 5.1 Offshore Drilling Forecast, 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Wells Drilled</th>
<th>% of all Offshore Wells drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>178</td>
<td>42%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>168</td>
<td>40%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>25</td>
<td>6%</td>
</tr>
<tr>
<td>Italy</td>
<td>25</td>
<td>6%</td>
</tr>
<tr>
<td>Denmark</td>
<td>21</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>425</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
6 FINDINGS AND DISCUSSION

The findings and discussions, along with their associated conclusions and recommendations drawn, are presented under a number of themes. These themes evolved from the triangulation and are depicted in Figure 6.1.

Figure 6.1 Structure Used to Present the Findings of this Review
Each theme is discussed in a structured manner using the tabular format presented in Figure 6.2. The tables also identify for each theme, the applicable objectives of the review (see page 22), the review’s scope “identify, analyse, and assess” requirements (see page 23) and the more detailed questions (which the review needs to answer, see Appendix I).

Figure 6.2 Illustration showing how each theme is discussed

### 6.1 Regulatory Approaches in EU and EEA Countries

In this section the national regulatory approaches in EU and EEA countries for the mineral extraction through drilling industry are discussed and compared. In making a comparison and drawing conclusions, it is useful to have an understanding of what such a regime sets out to achieve. One definition of the objectives of a safety regime is presented in the neighbouring text box. This definition was developed in an offshore oil and gas environment; however the objectives are equally applicable for other mineral extraction through drilling activities.

“a safety regime … must ensure that:

- Life, environment and property are protected in an effective, consistent, transparent and predictable way; both for those directly affected and involved in offshore operations, but also for those otherwise affected by an accident, such as fisheries, recreation and the whole ecosystem.

- Risks are properly evaluated and all prevention and mitigation measures are identified.

- Control measures are implemented and maintained by all parties in accordance with mandatory risk assessments as well as what is prescribed in legislation

- Conditions of safeguards, facilities, procedures, personnel and organisations are continuously monitored throughout the lifetime for proper functioning and compliance with all regulatory requirements and to assure that risks do not increase.

- Technical innovation and efficiency improvements can be implemented safely and responsibly.”

Pitblado et al, 2010
6.1.1 National Legislation

This section discusses the findings of the review in regard to the national legislation that implements the requirements of Directive 92/91/EEC. It considers these under 5 primary themes / headings:

- Regulatory framework / structure (this includes discussion of the degree to which the country has directly transposed the directive).
- Goal setting vs. prescriptive (the legislative type – “how” the aims of directive are delivered).
- Scope coverage (“what” the legislation covers and “where” it applies).
- Scope technical and administrative requirements (“what” the national legislation requires to be undertaken).
- Roles and responsibilities (as defined in the legislation, the “who”)

6.1.1.1 Regulatory framework / structure

<table>
<thead>
<tr>
<th>Theme</th>
<th>Regulatory framework / structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Findings and discussion</td>
<td>The legislation in the majority of countries follows a similar structure to that of the Commission’s Safety and Health directives (see Section 4), i.e. there is framework health and safety legislation under which the specific legislation for the mineral extraction through drilling lies. The exception is Germany where there is a single piece of legislation for safety in the mining industry.</td>
</tr>
<tr>
<td></td>
<td>As a general statement:</td>
</tr>
<tr>
<td></td>
<td>- The member states and EEA countries with more mature and significant oil and gas industries (Denmark, Italy, Netherlands, Norway and UK) have the requirements of Directive 92/91/EEC embedded in a number of different regulatory instruments. This was stated to be because:</td>
</tr>
<tr>
<td></td>
<td>o Their mineral extraction through drilling and legislation for the industry pre-dates Directive 92/91/EEC.</td>
</tr>
<tr>
<td></td>
<td>o Their legislation evolved based on their experiences. For example Norwegian legislation changed significantly following learning’s from the Alexander Keilland accident in 1980, and the UK legislation was fundamentally changed based on learning from Piper Alpha in 1988. Other countries have also taken on board learning from these accidents (as well as their own experiences). As such, several countries had already addressed the key requirements of the Directive 92/91/EEC (which is widely seen as the EC’s response to the Piper Alpha), prior to it coming into effect.</td>
</tr>
<tr>
<td></td>
<td>It is worth noting that, at the time the directive was introduced these countries did use it as a “check list” against which to check the completeness of their legislation in addressing the directive’s requirements. This was seen positively in the interviews with stakeholders from these countries; however they saw the directive as providing more value to others.</td>
</tr>
<tr>
<td></td>
<td>Additionally these countries have continued to evolve their legislation based on learning and experience. For example there have been recent significant changes in the national legislation for Denmark and Norway based on their own experiences and learning from other countries.</td>
</tr>
<tr>
<td></td>
<td>- The countries that recently joined the EU have tended to implement the requirements of the directive by transposing it, with some modifications to fit their situation, directly into their law</td>
</tr>
</tbody>
</table>

Objective: 2.3
Scope Requirements: d
Questions: 1.5.12, 13, 14
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling (repealing old legislation if required). This occurred as it was a pragmatic means to demonstrate that their national legislations met the requirements of all EU law, which is a requirement to gain approval to join the European Union. With a direct transposition of the directive they clearly were able to demonstrate compliance. Poland is an exception and compared the requirements of the directive to their existing legislation and concluded that it addressed the requirements without the need for a major change. The countries which directly transposed the directive into their national legislation were positive to the value of the directive as it allowed them to progress promptly with implementing appropriate legislation in their country.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Regulatory framework / structure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Objectives: 2, 3</td>
</tr>
<tr>
<td></td>
<td>Scope Requirements: d</td>
</tr>
<tr>
<td></td>
<td>Questions: 1, 5, 12, 13, 14</td>
</tr>
</tbody>
</table>

**Figure 6.3 How EU and EEA countries have transposed Directive 92/91/EEC into their National Legislation**

One message that came through clearly from the interviews was that all countries see it as important to be able to structure and implement their legislation to fit with their history, legal system, culture, and other country specific factors. They, therefore, were supportive of directives over regulations as the best legislative approach for this area. This was supported by the survey, where no country wished to change the legislative form of Directive 92/91/EEC.

From the interviews and surveys it is clear that the countries with oil and gas industries see a need for the directive to be modified, primarily in terms of its content. Several countries stated that they saw that the proposed legislation (which is also said to be setting minimum requirements) as setting a higher standard more reflective of good practice in the oil and gas industry today. They indicated that they would be keen for some of the concepts in this legislation to be incorporated into Directive 92/91/EEC. This would:

- Improve Directive 92/91/EEC.
- Ensure that the directive and proposed legislation will work together.

Some also asked for modifications to the scope and structure. The latter was asked for to provide better clarity.

It should be noted that, from the survey, a significant number of countries saw no need to update the directive. These tended to be countries without an offshore oil and gas industry.

![Diagram showing the transposition of Directive 92/91/EEC into national legislation](image-url)
### Theme: Regulatory framework / structure

#### Conclusions

The regulatory framework is similar in the majority of EU and EEA countries with a framework legislation and specific legislation.

Directive 92/91/EEC has supported countries in:

- Verifying that their legislation covers all the requirements of Directive 92/91/EEC.
- Introducing legislation to meet the minimum expectations of the EU (e.g. Romania, Cyprus and Malta). This was important for new EU member states and countries with new (or potential future) mineral extraction through drilling industries.
- The directive allows countries to both meet the needs of the EU and to have national legislation that fits with their countries ways of working, legal system and culture.

Generally the countries with the more mature oil and gas industry have evolved their legislation based on on-going learning such that it goes beyond the requirements of the directive.

#### Recommendations

- Directive 92/91/EEC should remain a directive.
- Consideration should be given to updating the directive to reflect learning drawn on the improvements made to legislation in the countries with a more mature mineral extraction through drilling industry, especially oil and gas industry.

### 6.1.1.2 Goal oriented vs. prescriptive

#### Theme: Goal oriented vs. prescriptive

#### Definitions

- **Prescriptive legislation** dictates the means by which compliance is achieved, including what is to be done, by whom and how it is to be accomplished.
- **Goal or performance-based legislation** sets legislative goals or performance objectives and allows the regulated companies to identify the means to meet them.

#### Findings and discussion

The gap analysis, based on previous accident investigations, identified that “the regulatory system should ideally combine a goal based approach with prescriptive minimum standards in key areas”. The majority of countries have a mixture of goal oriented and prescriptive legislation. The largest group seeing themselves as “goal oriented approach with some prescriptive requirements”. The trend from the interviews shows a desire to change from prescriptive to goal oriented legislation (e.g. Denmark’s legislation has recently been updated, and is more goal oriented than previously). Goal oriented legislation was seen positively by those interviewed as it does not inhibit the introduction of new technology and can be applied in new areas. However there were requests for it to be supported by guidance to allow broad brush statements such as “competency must be ensured” to be met in a consistent and acceptable manner across EU and EEA countries.
Theme | Goal oriented vs. prescriptive
---|---
| Number of EU/EEA countries with Response
| 0 | Goal oriented, with no prescriptive requirements. |
| 1 | Goal oriented, with very few prescriptive requirements. |
| 2 | Goal oriented, with some prescriptive requirements. |
| 3 | Both goal oriented and prescriptive (has many prescriptive requirements). |
| 4 | Predominantly prescriptive with limited goal oriented aspects. |
| 5 | Fully prescriptive (there are no goal oriented aspects to our legislation). |

**Figure 6.4 The Degree to which the National Legislation in EU and EEA countries is Goal oriented or Prescriptive**

It was clear from the interviews that the North Sea regulatory environment (which is predominantly goal oriented with some prescription) is seen as world leading. This is supported by independent post Macondo review for the UK offshore industry; “the Panel notes and commends in particular: the UK’s “goal setting” safety regime and its ability to foster innovation and continuous improvement in process integrity” (Maitland, 2011).

There is one clear exception to taking a goal oriented approach, namely Poland, where the national legislation was described as being fully prescriptive. They were based on their legislation prior to joining the EU and its past history as a managed economy.

Furthermore the directive was seen by stakeholders interviewed as supporting the “goal oriented” approach at the national level.

In some countries where the legislation is goal oriented, the practice is that by “following guideline or standard X the goal is deemed to be achieved”. Stakeholders in these countries did say that this makes the regulatory environment feel more “prescriptive”. They also said that they were reluctant not to follow the approved guidelines and standard as the effort required to prove a better or equivalent standard of safety was too time consuming and with potential to be rejected “just because the standard has not been used”. This was expressed in Norway.

Having said this, there was a general consensus that updating standards to reflect learning, e.g. from incidents, is achieved more quickly than updating legislation. The goal oriented approach with approved standards was seen as beneficial in term of responsiveness.

- One challenge is that where EU and EEA countries have approved standards there is little commonality between the countries on which standards they approve.

Applicability for new more extreme environments

- From the interviews the goal oriented approach, followed by most countries and supported by the directive, was seen as applicable in new more extreme conditions (e.g. for deep water and HP/HT wells, severe weather west of Ireland and in arctic conditions).
### 6.1.3 Scope coverage

For all stakeholders to be efficient and effective in delivering the goals of (and to comply with) all legislation, it is important that there is clarity on which legislation applies for what, when, where, and for whom. With the potential new European major hazard legislation for the offshore oil and gas industry, it is important that it works with the national legislation that implements the requirements of Directive 92/91/EEC. It is therefore important for the Commission to understand how countries have interpreted the boundaries for their current national legislation so they can match this with the boundaries they envisage for the proposed legislation. This section breaks down different aspects for what and where the national legislation applies. It therefore outlines how the different countries have understood the boundaries of the directive.

#### 6.1.3.1 Who is protected

**Theme**

Who is protected

<table>
<thead>
<tr>
<th>Findings and discussion</th>
<th>Who is protected</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directive 92/91/EEC and the national legislation which implement the requirements of the directive are all aimed at protecting “workers”. However, who are workers at a site (offshore facility or onshore site) is seen differently in different countries. Additionally some countries have extended the legislation to also cover the general public who are exposed to the hazards originating from the site.</td>
<td></td>
</tr>
</tbody>
</table>

From the survey results, see Figure 6.5, it can be seen that:

- All countries responding to the survey / interviews see the operator’s employees as being covered.
- All bar one of these countries see contractor/sub-contractors working for the operating company also being covered.
- Some countries (namely Cyprus, Luxembourg, Portugal, Slovenia, Sweden, UK and Norway) have enhanced the requirements of their legislation beyond protecting workers to also protecting the general public in the vicinity of a mineral extraction through drilling facility.
**Theme**: Who is protected

<table>
<thead>
<tr>
<th>Who is protected</th>
<th>Number of EU / EEA Countries with Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees of the operating company</td>
<td>25</td>
</tr>
<tr>
<td>Employees of the contractors and sub-contractors</td>
<td>20</td>
</tr>
<tr>
<td>Regulators</td>
<td>15</td>
</tr>
<tr>
<td>All other visitors</td>
<td>10</td>
</tr>
<tr>
<td>External emergency responders when responding to an incident / accident</td>
<td>5</td>
</tr>
<tr>
<td>General public</td>
<td>0</td>
</tr>
</tbody>
</table>

When at the workplace  | Outside the workplace

When the workplace

![Figure 6.5 “Who is protected” by the national legislation that implements the requirements of Directive 91/92/EEC by population groups](image)

**Conclusions**: There are differences in the worker groups that national legislation aims to protect. It is also seen that some countries have extended to also seeking to protect the general public.

**Recommendations**:
- It is recommended that the Commission produces guidance that clearly defines the people that national legislation should aim to protect when at the workplace / within the geographical extent of the directive’s applicability. (It is noted that there is a definition of “worker” in Directive 89/391/EEC and all groups other than the general public would fall into this definition, however their employer will differ).
- Accepting the protection of the general public is outside the remit of Directorate General Employment, Social Affairs and Inclusion, the Commission should consult internally with those responsible for the protecting the general public to determine if the guidance should provide advice on the appropriateness of countries extending the scope of their national legislation to cover the general public, and if so which directive the public are protected under.
### 6.1.1.3.2 Hazards covered

<table>
<thead>
<tr>
<th>Theme</th>
<th>Hazards covered</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Findings and discussion</strong></td>
<td>All countries have indicated that all sources of hazard are covered. Generally this was said to be under their national legislation that implements the requirements of Directive 92/91/EEC. One difference is for Romania where they see their national legislation that implements the directive as being occupational safety focused, with their other (framework) legislation being the mechanism that requires all hazards to workers to be addressed. Part C, Article 1.1a of the directive outlines requirements to &quot;identify the special sources of hazard&quot;. In interviews stakeholders were asked about how their national legislation interprets the term “special sources of hazards”. Although some did say what they thought the term meant, it came through clearly that countries were not differentiating “special” from other sources of hazards, and were requiring all hazards to workers to be covered under their legislation.</td>
</tr>
<tr>
<td><strong>Conclusions</strong></td>
<td>There is uniformity of agreement from all the EU and EEA member states that their legislation which implements the requirements of the directive requires all forms of hazard to workers to be considered. This includes occupational accidents, occupational illness and major accidents, whether they originate from the activity (e.g. a blowout) or are from an external situation (e.g. a major storm). Note that this means that Directive 92/91/EEC covers all the major accidents with a potential to cause harm to workers, so clearly there is an overlap with the major accidents that are to be covered by the proposed legislation.</td>
</tr>
</tbody>
</table>
| **Recommendations**           | - If there is an update of the directive then it is proposed that the requirement of “all hazards to workers” are to be addressed, and if the term “special sources of hazard” is used that it is clearly defined.  
- The Commission needs to provide clarity on how the directive and the proposed legislation are to work together without duplication of effort in protecting workers from major accidents. |

### 6.1.1.3.3 Types of mineral extraction through drilling covered

<table>
<thead>
<tr>
<th>Theme</th>
<th>Types of mineral extraction through drilling covered</th>
</tr>
</thead>
</table>
| **Findings and discussion**   | There were some different views presented on “what is mineral extraction” in interviews. There were some areas where countries have extended into areas that they view as not being mineral extraction, however they see that the risks as being similar to those of the mineral extraction through drilling industry. During the interviews an example of what might be seen as “accidental” mineral extraction through drilling was given to explain why the applicability of their legislation was extended into an area which may not be seen as mineral extraction through drilling. In the Netherlands geothermal drilling resulted in incidents where the drilling hit gas which came out of the well. Because of this hazard the legislation which implements the requirements of Directive 92/91/EEC was extended to cover drilling for geothermal energy. Hence there are countries that require other drilling industries to comply with their legislation that implements the requirements of Directive 92/91/EEC.  
Some stakeholders indicated that their national legislation which implements the requirements of Directive 92/91/EEC covers only those types of mineral extraction through drilling which are currently taking place in their country.  
There are a couple of instances where a country’s regulator has indicated that it does not apply their national legislation which implements the requirements of Directive 92/91/EEC to an activity that is clearly seen as a mineral extraction through drilling, in other countries. This is illustrated in Table 6.1. |

**Theme**

**Types of mineral extraction through drilling covered**

<table>
<thead>
<tr>
<th>Country</th>
<th>Offshore oil and gas extraction</th>
<th>Onshore oil and gas extraction</th>
<th>Shale gas extraction</th>
<th>Gas storage in depleted gas fields</th>
<th>Salt extraction</th>
<th>Gas storage in brines</th>
<th>Sulphur extraction</th>
<th>Carbon capture and storage in depleted gas fields</th>
<th>Water extraction</th>
<th>Geothermal</th>
<th>Taking core samples (e.g. for coal or metal ores)</th>
<th>Other</th>
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</table>

**Table 6.1 Matrix of types of mineral extraction through drilling vs. Countries which presents the presence of the type of drilling and the applicability of the country’s National legislation that implements the requirements of Directive 92/91/EEC**

<table>
<thead>
<tr>
<th>Type of Mineral Extraction Through Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offshore oil and gas extraction</td>
</tr>
<tr>
<td>Onshore oil and gas extraction</td>
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<tr>
<td>Shale gas extraction</td>
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<td>Gas storage in depleted gas fields</td>
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<td>Salt extraction</td>
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<td>Gas storage in brines</td>
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<td>Sulphur extraction</td>
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<td>Carbon capture and storage in depleted gas fields</td>
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<tr>
<td>Water extraction</td>
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<tr>
<td>Geothermal</td>
</tr>
<tr>
<td>Taking core samples (e.g. for coal or metal ores)</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

**KEY**

- **A** Yes
- **B** No
- **C** Do not know
- **D** No
- **E** No
- **F** Yes / DNK
- **G** Do not know
- **H** Do not know
- **NA** Not applicable - No offshore Industry, or no other mineral extraction through drilling industry

Industry active in country

Industry regulated according to Directive 92/91/EEC in country
Theme | Types of mineral extraction through drilling covered | Objective: 1, Scope Requirements: a Questions: 6, 7, 8
--- | --- | ---
Conclusions | There are some variations in what countries see as “mineral extraction through drilling” resulting in what appears to be gaps in regulatory coverage. Additionally some countries have extended the application of their national legislation to some types of drilling (which may not be seen as mineral extraction through drilling, e.g. CO₂ storage) because they see the drilling and well activities as exposing workers to the same risks. |  |
Recommendations | • The Commission should produce guidance on what is deemed to be mineral extraction through drilling and what is not. It is suggested to include in the guidance that it is reasonable (and may be seen as good practice) to extend the application of the directive beyond its direct the scope to manage types of activities which are potentially subject to the same types of hazards. |  |

6.1.1.3.4 Activities though the lifecycle covered

Theme | Activities though the lifecycle covered |
--- | --- |
Findings and discussion | This section is asking when, during the lifecycle of a mineral extraction through drilling site, the national legislation that implements the requirements of Directive 92/91/EEC is applicable and seeking to protect workers. (Note that it is not asking when work to deliver requirements of the directive is taking place⁵).

The findings show that the core activities of drilling and production are covered under national legislation that implements the requirements of the directive in all countries in which stakeholders responded to the survey or were interviewed. There is variation in whether the seismic, construction and decommissioning activities at the mineral extraction through drilling sites are covered.

For all the countries interviewed, it is clear that national legislation that implements the requirements of the directive does not apply to activities away from the extraction through drilling workplace, such as construction of offshore production modules in shipyards.

⁵ In addition to actions to protect workers during mineral extraction activities, there will be activities undertaken away from the extraction through drilling workplace, e.g. during design and ship yard construction, which are helping to protect workers and meet the requirements of the national legislation. Examples will be risk studies during design, production of safety and health reports and inspections during construction at a shipyard.
During the mineral extraction through drilling life cycle stages there are a number of associated activities such as travel to / from a facility by helicopter or vessel, supply to the facility, etc. In some countries, protecting the safety of workers for some of these associated activities falls under the national legislation which implements the requirements of Directive 92/91/EEC.

For an onshore mineral extraction through drilling facility the national legislation which implements the requirements of the directive was applicable when the activity was taking place within the site boundary. However it was learnt that in some countries their legislation also requires operators to protect the safety of the workers on their normal journeys to and from work.

For offshore installations the following picture appeared:

- For travel to / from the installation about a quarter of countries with offshore activities seek to protect the safety of workers during their travel to / from the offshore installation (by helicopter or vessel) under their national legislation which implements the requirements of Directive 92/91/EEC.

- For supply vessels all countries covered the activities associated with the mineral extraction through drilling activity (e.g. transfer / lifting of equipment and resources onto the installation) under the national legislations which implements the requirements of Directive 92/91/EEC. For transit to / from and movement next to the installation there were differences between countries.

- For diving activities, for example to undertake maintenance and inspections, there were differences in whether the national legislation that implements the requirements of Directive 92/91/EEC applies to these workers (divers) between EU and EEA countries.

From the interviews, what elements of the above activities were “mineral extraction through drilling” activities appeared to be viewed differently by different regulators. It is therefore difficult to conclude that the differences are due purely because countries are “extending” the legislation to cover activities beyond mineral extraction through drilling. It has to be concluded that some of the
### Theme: Activities though the lifecycle covered

<table>
<thead>
<tr>
<th>Objectives: 1, 2, 4</th>
<th>Scope Requirements: a</th>
<th>Questions: 22, 23, 24</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differences are due to countries seeing the “end point” of the mineral extraction through drilling activities differently. Although there was variability between EU and EEA countries over the boundary for the application of the national legislation which implements the requirements of Directive 92/91/EEC, the review did not identify gaps between this national legislation and other national or international legislation. In all cases discussed it was clear that where the national legislation for Directive 92/91/EEC did not apply, other legislation was applicable (i.e. no mineral extraction through drilling activities or associated activities were identified as not coming under some form of legislation in the countries where stakeholders were interviewed).</td>
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### Conclusions

The national legislation implementing the requirements of the directive in all countries covers the core mineral extraction through drilling activities of drilling and production, however there is inconsistency in its application during other phases of the lifecycle. Similarly there is variability on the application of the national legislation over activities associated with mineral extraction through drilling.

### Recommendations

- The Commission should develop guidance to explain the times during the lifecycle of a facility when it is intended that the workers involved in that stage / activity of the lifecycle are protected through the application of the requirements in Directive 92/91/EEC.
- The Commission should develop guidance to explain what they see as a mineral extraction through drilling activity that should be covered under the national legislation that implements the directive.

### 6.1.1.3.5 Situations covered

<table>
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<tr>
<td>Questions: 26</td>
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<tr>
<td>Findings and discussion</td>
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<tr>
<td>From the survey and interviews it is clear that all countries see that their national legislations which implement the requirements of Directive 92/91/EEC are applicable for all situations (normal operations, emergency situations, etc.). The importance of this was also recognised from the gap analysis which concluded there was a need to ensure safety in both normal and emergency situations.</td>
<td></td>
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<tr>
<td>Conclusions</td>
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<tr>
<td>All countries see that the directive is seeking to protect workers in all situations.</td>
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<td>Recommendations</td>
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### 6.1.1.3.6 Work place / geographical extent

<table>
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<th>Work place / geographical extent</th>
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<td>Objectives: 1, 2, 4</td>
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<tr>
<td>Questions: 26</td>
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<td>Findings and discussion</td>
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<tr>
<td>The directive defines the workplace as: “the whole area intended to house workstations, relating to the immediate and ancillary activities and installations of the mineral-extracting industries through drilling, including accommodation, where provided, to which workers have access in the context of their work”. For onshore mineral extraction through drilling, the definition of the workplace / geographical extent for which the national legislation that implements the requirements of the directive was clear and consistent in terms of all stakeholders confirming that it covered the area inside the site boundary where the mineral is extracted. There are differences on whether their legislation covers associated pipelines, offshore storage and offshore processing materials. Additionally, one country indicated that travel to / from work is covered by their framework health and safety legislation.</td>
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DNT NORSKE VERITAS
Report for European Commission
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling
Offshore, the definitions vary in a similar fashion to that for onshore. For those with national legislation covering the offshore industry there are two definitions equivalent to the “site boundary”. The majority define the installation and a zone around it covered by their legislation; others state that only the installation itself is covered. How the zone is defined around a facility varied between countries, however it was generally defined as around 500m from the installation. Fewer countries see the pipelines, subsea completions, and onshore storage and processing as being covered.

Note that an area which is not covered under the legislation in one country does not mean that the country does not regulate the safety of workers for that area. From the interviews it was clear that these areas came under other legislation.

The national legislation implementing the requirements of the directive in all countries does cover the “site” (site boundary onshore and installation offshore), i.e. the “immediate … activities and installations for mineral-extracting” are covered by all. What is seen as ancillary varies from country to country. For example for offshore it is common to extend the site to include a zone around a rig (typically 500m), and there is variability on whether associated pipelines, storage and processing away for the extraction site is covered.

The Commission should develop guidance to explain which workplaces associated with mineral extraction through drilling are to be covered by the national legislation that implements the requirements of Directive 92/91/EEC.
6.1.1.4 Scope Technical and Administrative Requirements
This section discusses the technical and administrative (reporting) activities that are required by the national legislation that implements the requirements of the directive.

6.1.1.4.1 Safety and health management system

<table>
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<tr>
<th>Theme</th>
<th>Safety and health management system</th>
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</thead>
</table>
| A Health and Safety Management System | A safety and health management system is the framework of processes and procedures used to ensure that an organisation operates in a manner that controls its health and safety risks and that it improves its performance by means of continuous improvement. A simplification is “Plan, Do, Check, Act”. A more complete view includes definitions of roles and responsibilities, a schedule for activities to be completed, an assurance/auditing and corrective action step all with the goal of creating an upward spiral of continuous improvement. An employer working in accordance with a health and safety management system ensures that hazards are identified and assessed, measures to protect the health and safety of workers are identified and implemented, and assurance is gained to demonstrate that the measures are in place and effective. The safety and health management system also will include requirements (actions) which are supporting measures (making sure they are in place and have their required effectiveness/reliability) and/or are providing assurance of measures.

Directive 92/91/EEC has a specific requirement that the “safety and health management system is regularly reviewed to ensure compliance with this directive” and (for the offshore sector) for the safety and health document to “show that the management system must comply with the provisions of Directive 89/391/EEC and this Directive in both normal and critical situations.” Therefore the requirements for both Directive 92/91/EEC and 89/391/EEC should be reflected within the management systems of any operator in the mineral extraction through drilling industry.

Directive 89/391/EEC does not use the term “management system”, however it includes many requirements that one would expect to be in a health and safety management system.

<table>
<thead>
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<th>Findings and discussion</th>
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</table>
| In accident investigations, it is common that the root causes of the accident should have been controlled by requirements of a management system. The fact the accident happened means that the management system either lacked a requirement, its requirement was in adequate, or its requirement was inadequately implemented. The gap analysis (see Appendix II) identified safety and health management system related gaps between the learning from the accident investigation reports and the content of the directive. If these were addressed (or were addressed more fully) in the directive then it would be improve (gaps closed). The specific issues raised are:

- **GAC 1** - “A safety management system intended to promote operational excellence and a strong safety culture”.
- **GAC2** – “Safety-driven decision-making to ensure an appropriate balance between time, money and safety”.
- **GAC3** – “Project risk management to manage business risks that may impact on worker safety”.
- **GAC5** – “Compliance with safety-critical operating procedures”.
- **GAC6** – “Communication of safety-critical information between stakeholders, to ensure that
companies exchange information that is necessary to ensure safety and health"

- GAC9 – “Adequate well design to maintain safety margins”.
- GAC10 – “Well control procedures covering normal operations and emergency response; including risk assessment, influx monitoring and blowout preventer (BOP) operation”.
- GAC11 – “Adequate weather forecasts for operations sensitive to adverse weather”.
- GAC12 – “Operating procedures taking account of adverse weather”.
- GAC13 – “Specific design criteria and operating limits in adverse weather”.
- GAC14 – “Ballasting procedures covering normal operations and emergency response on floating platforms”.
- GAC15 – “Joint procedures for vessel-platform interface operations”.

(Discussion on the providing details about and gaining assurance over, the health and safety management system are covered in Section 6.1.1.4.6 and 6.1.1.4.4.)

Conclusions

Directive 92/91/EEC (and the framework Directive 89/391/EEC) does not include an explicit requirement for employers to have a health and safety management system. It is also limited in terms of requirements for the management of drilling activities and well control (see Item 5 of Part A of the directive). Having said this many of the requirements in the directives would be naturally implemented through a management system.

The specific issues listed from the gap analysis could be addressed through enhancements to Directive 92/91/EEC or supporting guidance.

Recommendations

- Directive 92/91/EEC should make specific reference to the requirement to have a management system (or equivalent) to implement the requirements of the directive and to drive continuous improvement.
- The issues (gaps) raised from the comparison of the directive with causal factors of major accidents should be reflected in an update of the directive and / or supporting guidance.
- Particular and specific attention should be given to making the directive more explicit regarding the management of drilling activities and well control as the current provisions are limited.

**6.1.1.4.2 Risk assessment**

Both Directive 92/91/EEC and its “mother” Directive 89/391/EEC require a risk assessment. The scope for the risk assessment covers all hazards that pose a risk to workers, in all situations (see Sections 6.1.1.3.2 and 6.1.1.3.5). From the interviews it was found that the approach followed tended to be “generic” for occupational health and safety accidents and illnesses and specific, for major accidents (blowouts, explosions, structural failure, etc.), especially for offshore oil and gas. I.e. the major accidents were identified and assessed in detail with facility / operation specific measures to safeguard the safety and health of workers defined. (Note that this does not mean that the occupational accidents / illnesses were not considered, rather that these were handled in a more generic manner in accordance with an organisation’s standard safety management approaches and systems).

The gap analysis identified the following area where the directive could be enhanced through an update of its specific requirements which set a requirement on what is expected from a risk assessment:
6.1.1.4.3 Safety and Health Document

<table>
<thead>
<tr>
<th>Theme</th>
<th>Safety and Health Document</th>
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<tbody>
<tr>
<td>Findings and discussion</td>
<td>Aspects relating to the development of a safety and health document, a requirement of the directive outlined in Article 3, were explored. The findings indicate:</td>
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<td></td>
<td>The national legislation across all the various EU and EEA countries places obligations on the responsible party to develop a safety and health document. This aspect of the directive is understood to be fully transposed across all EU and EEA countries in different forms:</td>
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<td></td>
<td>Some countries which require the safety and health document as a standalone document, however they may give it different names. For example in Ireland it has retained the designation from the directive and is called the “Safety and Health Report”, while Denmark ask for a “Health and Safety Document” and the UK a “Safety Case”. Despite variations in the titles, all these documents are understood to cover the scope required by the directive.</td>
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<td></td>
<td>Other countries see that the scope of the safety and health document, as required by the directive, is covered by other documents which are required by their national legislation. For example, in Poland and Germany, a document called the “Operations plant manual” is developed (a requirement that stems from national legislation that</td>
</tr>
</tbody>
</table>
Theme: Safety and Health Document

This document existed prior to the introduction of the directive or their joining the EU. This document was said to include what is required of a Safety and Health Document from the directive.

- The third approach followed by Norway is not to formally require a standalone safety and health document, but to require that the expected contents of such a document exist in other operational documents for a facility.

This is testament to the strength of the directive approach in that it offers countries the flexibility to modify elements to fit their local context without detracting from the overall intent.

Additionally:

- From the interviews it was learnt that regulators expect to be able to access and review the Safety and Health Document (or equivalent) during an inspection.
- The Safety and Health Document is seen as “live document”. All countries, except Luxembourg, have a requirement in their national legislation for the safety and health document (or equivalent) to be kept up to date.

Keeping a document “live” raised the question of what drives the updates. The directive requires that the Safety and Health Document “must… be revised if the workplace has undergone major changes, extensions or conversions”. What is a “major change, extension or conversion” was investigated. Nine countries said they had a formal definition for the term. These included the following:
  - An “extension of exploitation area”.
  - A change that potentially impacts “on major accident risk, or changes assumptions made in previous risk analyses, typically changes to safety critical elements”.
  - A change that “results in a change in working conditions (for example how the work is organised or a change in the rhythm of the work)”
  - “… changes [to] the basis on which the original safety case was accepted. This would involve changes to the basis on which risk control decisions are made or which necessitate a review of the adequacy of major hazard control measures.”

One country without a formal definition summarised their practice that a major change is “when work organisation, technology and work equipment is changed, the workplace has been enlarged or modified”.

For the countries that had a major change definition they all said that it covers “equipment / physical changes” and “procedural changes”, and all except one said it covered “organisational changes”.

Other drivers for updating the Safety and Health Document included:

- A major accident.
- A regular review. Three countries have a requirement that the Safety and Health Document is reviewed (and updated if required) within a defined period (Hungary 3 years, Netherlands and UK 5 years).

Across all countries, the obligation to develop the safety and health document (or similar) was generally seen by the stakeholders interviewed to add value; more so in some countries than in others. In some of those countries where other documents that covered essentially the same scope are also developed, the safety and health document was as seen as duplicating existing provisions and thus surplus to requirements. It is recognised that this is largely an issue on how national legislation is organised rather than with the directive itself.
MANAGING RISK

Theme | Safety and Health Document | Conclusions | Recommendations
--- | --- | --- | ---
All countries have legal requirements to develop a safety and health document (or equivalent) within their national legislation that implements the directive. The document is generally seen to add value.
The directive approach has enabled countries to implement the provision relating to the safety and health document in a manner that fits with their other legislation and work practices.
Following on from the above, this aspect of the directive is understood to be fully transposed across all EU and EEA countries.
There are some issues with regard to duplication of effort associated with the need to provide documents that essentially cover the same scope.

Conclusions

Recommendations

- The directive approach should be maintained.
- The Commission should consider implementing measures / initiatives (e.g. guidance documents) that will support member states in transposing directives in a manner that ensures the best fit with existing national legislation and consistency across the EU.

6.1.1.4.4 Assurance of deliverables

Theme | Assurance of deliverables | Findings and discussion
--- | --- | ---
Assuring the quality of the work that underpins safety and health is a key element in ensuring that the overall objectives of the directive are met. The directive does not explicitly define any particular assurance activities that should be undertaken; however, it does require that member states bring into force the administrative provisions required to ensure compliance with the provisions contained therein (see Article 12). Consequently, it is important to understand how assurance over the quality of the safety and health work and its deliverables is achieved by the key parties (i.e. the regulated parties and the regulatory authorities).
For regulated parties and their deliverables:

- Some countries require the health and safety activities to be covered by a formal quality management system (QMS). Two countries require that the QMS is formally accredited to a recognised standard such as ISO9000.
- Some EU and EEA countries have included requirements for the regulated parties to have independent checks of certain elements of their health and safety deliverables (e.g. the risk assessment and safety and health document) as part of their national legislation. Where such requirements are in place, there are two different interpretations of term independent. In some countries, the word is used in the fullest sense and denotes complete separation (i.e. such checks can only be undertaken by a 3rd party); in others independence is defined as separate from the party that undertook the work (i.e. checks can be carried out by both 2nd and 3rd parties).
- In some EU and EEA countries a check of health and safety deliverables is made by the regulator.

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6 2nd party is someone independent of the 1st party (the party that does the work) but is under the same governance. Typically a 2nd party auditor would be someone from another part of the organisation (or hired in but) undertaking the audit to the organisation’s own standards. 3rd party is someone who is independent of the 1st party (the party that does the work) can is from a different organisation and under different governance. A 3rd party auditor is someone from an external organisation undertaking the audit to standards not set by the organisation.
The review did not formally assess if any of the different assurance approaches of the deliverables is better than the others. It is worth noting that North Sea countries, which are the top 4 producers of oil and gas in terms of volume (Norway, UK, Netherlands and Denmark), all require use of a quality management system to help assure the quality of the safety and health work and its associated deliverables. (Discussion on how the regulators review deliverables is covered in Section 6.1.2).

Conclusions

- The assurance strategies adopted by the various countries with regards to safety and health documentation differ in some areas and are similar in others e.g. some countries require the regulated parties to conduct independent checks and others do not. Furthermore, there are differences in how the term independence is understood. What appears to be the case is that each country has developed (or evolved) an approach that serves its needs. Additionally, the current top producers (for the most part) require an increased level of assurance in comparison to other countries.

Recommendations

- More clarity on how the provisions contained within the directive should be administered would be useful (as the directive currently does not address this). This should allow for a degree of flexibility to allow tailoring to reflect the situation in each country.

6.1.1.4.5 Verification of control

Verification of control covers the actions taken to confirm that the safety critical aspects of an installation, which are critical in that they deliver the acceptable level of protection for the workers, are in place and are delivering their required functionality with their required at their level of reliability. Note that the safety critical aspects can include hardware (for example passive and active protection systems) and employee action and behaviour in accordance with procedures, safety management systems, etc.

Typically, activities to verify control are not singular but involve a continuous process that starts in design and continues through the life of a facility. It includes:

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<th>Assurance of deliverables</th>
<th>Objectives: 1, 2, 4</th>
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<tr>
<td></td>
<td>QMS (National legislation requires the regulated party to have a quality management system which covers safety and health activities and deliverables)</td>
<td>Scope Requirements: a, b</td>
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<tr>
<td></td>
<td>Independent Check (National legislation requires an independent check/ review of safety and health documents, can be by an internal or external party)</td>
<td>Questions: 12, 13, 29, 30</td>
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<td>External (3rd Party) Independent Check</td>
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**Figure 6.9 Presentation of Legislated Quality / Assurance Approaches by Country**
### Theme

**Verification of control**

<table>
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<tr>
<th>Objectives:</th>
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<tr>
<td>Questions:</td>
<td>a, b</td>
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- Verify that the design is to the required standards and that the safety critical aspects will deliver as required to protect workers.
- Inspections and checks through the construction phase to ensure an installation is built as designed.
- Inspections and checks during operations to ensure that the facility and its safety critical aspects continue to function as designed.

This can apply to drilling a well, a production facility or a change to facility.

### Findings and discussion

The focus is on the requirements to verify how the verification is to be delivered. The findings (which come from the interviews and gap analysis) are as follows:

- The national legislation in a number of countries (e.g. the UK, Norway and Denmark) requires independent verification of elements considered critical to ensuring the integrity of the mineral extraction facility and thus the safety of persons at risk. This requirement applies during, design, construction, and operation. Generally speaking, the need for and scope of verification activity, as well as the verification method is developed by the operator but agreed by the regulator. As with Section 6.1.1.4.4, the interpretation of the term “independent” can mean it is a either 2nd or 3rd party activity.
- Other countries (e.g. Poland, Netherlands) do not have such obligations as part of their national legislation. In Netherlands, such schemes are not legislated for as it is seen that they pass responsibility to the authorities, however the general practices is that operators follow a verification scheme similar to that used in the UK. This is driven by their internal company requirements. The regulator has been known to draw on the verification reports to inform their assurance compliance activity.
- Where there are verification activities these cover all aspects including wells, structures, production, etc.
- The need to verify that regulatory provisions have been met was one of the recommendations from two of the accidents analysed in the gap analysis (Deepwater Horizon in 2010 and P-36 in 2001). Consequently, that element of the work concludes that the need to “independently confirm or verify that the provisions of directive have been met with particular regard to the adequacy of risk assessments, procedures, etc.” is an area where the directive could be enhanced through an update of its specific requirements. (GAC 16)
- In all countries in which stakeholders were interviewed, any equipment that falls under the pressurised equipment directive (PED) has to be verified (by notified bodies) as conforming to the provisions set out in the PED.
- Operators across the member states generally indicated that they use health and safety management systems (whether or not it is required the national legislation) and that such systems constitute as a key component in the internal verification activity.
- Where there is a verification requirement, the schemes are seen to provide extra assurance to both the operator and the regulator with regards to compliance with statutory objectives.

### Conclusions

Not all countries have verification requirements embedded within their national legislation. The degree of independence required for the parties conducting the verification activity varies. The national legislation in some countries only accept verification by 3rd party providers, in others 2nd party verification is acceptable.

Operating companies, on the whole, tend to conduct verification, irrespective of whether not they are

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Theme: Verification of control

Verification of control is required by the national legislation. Based on learning from past accidents, verification that regulatory provisions have been met needs to be covered by the verification activity.

Recommendations

- The directive should be updated to include verification requirements. Doing so will help strengthen and formalise the verification activity already conducted within organisations as part of their normal operations. Such an update should include details of the scope, nature and how the verification requirements are to be executed (e.g. 2nd or 3rd party).

6.1.1.4.6 Reporting / information requirements

Theme: Reporting / information requirements

Findings and discussion

The reporting requirements from the operators vary across the EU and EEA countries dependent on the type of mineral extraction through drilling (e.g. oil and gas vs. salt vs. water etc.) and their legislation and enforcement processes.

During the pre-operation stage the primary document discussed with stakeholders under the legislation that implements Directive 92/91/EEC was the Safety and Health Document (including the Risk Assessment and the Safety Management documents). There is almost a 50:50 split between operators being required to submit their Safety and Health Document to their regulator and those who did not need to. In a couple of countries there is a need to inform the regulator that the Safety and Health Document has been produced but no need to submit it. The countries requiring the document (or equivalent) to be submitted are those who are reviewing the document prior to activity (see Section 6.1.2.1).

Figure 6.10 Countries required to submit / inform Regulators of Safety and Health Document

There are some slight variations in what the Safety and Health Document submitted includes. For example in the Netherlands they expect an operator to have a Safety Management System document that is submitted once and a Safety and Health document that is submitted for each of their facilities.
(and with major changes). In the UK, the Safety and Health Document (Safety Case) is expected to include the safety management system description and to be submitted for each of their facilities (and with major changes).

In addition to the potential requirement for the Safety and Health Document to be submitted, some countries request other documents to be submitted under their legislation that implements the requirements of Directive 92/91/EEC. From the interviews and survey, stakeholders have also stated these for their country. They give a good feel for the reporting / information requirements:

- Drilling programs.
- Details of the well designs.
- Drilling report (details of an actual drilling operation during its progress, this is required in about half of countries).
- Plans for development and operation.
- Details of the production facility designs.
- Emergency procedures (e.g. Ireland).
- Consent and acknowledgement of compliance.
- Notifications of:
  - Entry into county waters.
  - Relocation of a rig / installation.
  - Combined operations
  - Well operations.

For all countries there was an expectation that all relevant documentation would be made available to them during inspections. This can include not only the information mentioned above, but also evidence that the safety critical elements (equipment, procedures, etc.) are being inspected and maintained in accordance with requirements (e.g. internal and external audit reports, independent verification reports, inspection and maintenance records, etc.), details for accidents and corrective actions (e.g. accident investigation reports and their corrective action logs), competence evidence (e.g. competence requirements and HR records), etc.

Conclusions

The operator is expected to have all relevant information available for regulators at any time for their inspections. In addition, in some countries, there are requirements for other information to be submitted for review before activities start and during activities (e.g. drilling).

The formal need to submit documents is aligned to the enforcement approach. Where enforcement is through inspection only submission of information tends not to be required. Where the regulator’s enforcement includes the review of details prior to an activity or during an activity, the materials to be reviewed need to be submitted.

Hence although operators will fundamentally be producing the same information in support of their activities in all EU and EEA member states, what they submit / make available to the regulators, and when this takes place, varies based on the local legislation and enforcement approach.

Recommendations

- The Commission should set out the expectations on a regulator in regard to Directive 92/91/EEC. From this the basis reporting and information requirements will be clear. This will help in building a basic level of consistency across the EU and EEA countries.
### 6.1.1.5 Defined Roles and Responsibilities

This section discusses the organisation and person who is responsible for the safety of mineral extraction through drilling activities according to the national legislation on EU and EEA countries.

<table>
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<tr>
<th>Theme</th>
<th>Defined Roles and Responsibilities</th>
<th>Objectives: 1, 2, 4</th>
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<tr>
<td>Findings and discussion</td>
<td>Responsibility for fulfilling the legal obligations set out within all EU health and safety legislation (i.e. Directive 89/391 and all subsidiary directives, including Directive 92/91) relating to health and safety of workers is placed upon the “employer”; consequently, the employer has full responsibility for ensuring the health and safety of the workers. An employer is defined in Directive 89/391 as “any natural or legal person who has an employment relationship with the worker and has responsibility for the undertaking and/or establishment”. This approach effectively suggests a clear distinction between the parties the legislation seeks to protect (the workers) and those who are charged with ensuring their protection (the employer). However, given the multi-party involvement of various entities in the mineral extractive industries (license-holders, contractors, subcontractors, operating companies, drilling companies etc.) the reality is often much more complex. This section considers the national legislation that implements the requirements of the directive across the various EC and EEA countries and examines the party (or parties) upon which responsibilities are placed. In effect, it looks at how the term “employer” has been interpreted and understood. This topic was explored within both the interview sessions and the survey. The findings show:</td>
<td>Scope Requirements: a Questions: 27</td>
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|                               | • In the context of the mineral extractive industries, and particularly for the oil and gas sector, an established hierarchy exists amongst the various players starting with the licensee/concession holder at the peak of the pyramid and cascading downwards to various contractors/sub-contractors. Across the various EC/EEA member states, the focal point for responsibility occurs at various levels in the hierarchy.  
  o According the Norwegian national legislation, the license holder/operator has overall responsibility for safe operation of all activities on the concession. Engaging the services of a contractor does not discharge the license holder of this duty. The same applies to contractors who use sub-contractors. The basic principle at play is that responsibility starts at the top and remains at the top. This system is known locally in Norway as the “see to it duty” i.e. the party higher up the hierarchy must see to it that all contracted parties discharge their duties in a manner that ensures legal obligations are met.  
  o In other countries (e.g. UK, Denmark, the Netherlands and Poland), responsibility for complying with legal obligations rests with the entity that operates the facility on a day to day basis (often termed as the “operator”). In these countries, it may be the case that the license holder is also the operator. | |
|                               | • The responsible parties in all countries (irrespective of who they are) are obliged to coordinate all activities that occur as part of mineral extraction activity such that in practice, a “shared responsibility model” applies (albeit with some parties more responsible than others). This also suggests that the coordination requirements placed on the employer (in article 3 of the directive) are adequately transposed. It is worth noting that some countries also require demonstration as to how such coordination activities will be achieved. | |
| Conclusions                   | Taken together, the above shows there is some variation in terms of the focal point for legal responsibility. In some cases, the license holder is deemed to be the employer; in others the operator. The consistent theme across all the countries is that responsibility is ultimately a shared undertaking. All countries place coordination responsibilities on the responsible parties, irrespective of who they are. Some countries require demonstration as to how such coordination activities will be achieved. Considering the wider implications, it means that had an event similar to the Deepwater Horizon |

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occurred within EU waters, the party deemed to be legally responsible will vary across the countries. In some countries, BP will be seen as responsible, in others Transocean. This issue is important as the responsible party must have the capability to respond to a large scale incident both financially and technically. Consequently, clarity in this area is important.

**Recommendations**

- More clarity on how the “employer” concept adopted within EU legislation should be applied within the context of national legislation should be developed by the commission. The Norwegian “see to it” model is considered to be a robust and all-encompassing model and detailed consideration should be given to adopting the principles in this approach.
- In the wider context, any approach adopted should ideally consider the importance of the responsible organisation having the technical and financial capacity to respond to a large scale incident. It is noted that this issue is currently one that the proposed offshore legislation seeks to address.

### 6.1.2 Regulator

This section discusses the activities of the regulator in enforcing their National Legislation that implements the requirements of Directive 92/91/EEC. It considers this is in two parts:

- First, during the planning and design/construction stage prior to an operation taking place, i.e. ensuring planned operations will comply with the requirements of their National Legislation, and hence the requirements of the directive, and hence will operate in a manner that protects the workers.
- Secondly during operations, i.e. ensuring operators planned operations are complying with the requirements of their National Legislation, and hence the requirements of the directive, and hence are operating (and will continue to operate) in a manner that protects the workers.

#### 6.1.2.1 Enforcement during planning / design

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<tr>
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<th>Enforcement during planning / design</th>
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<td><strong>Findings and discussion</strong></td>
<td>As discussed the directive requires a Safety and Health Document which should present the basis for undertaking an operation safely. As such this and other supporting documents (e.g. drilling plans, emergency procedures, etc.) are one source to use to gain assurance for safe operations. Before operators can start operations in some countries (7 out of the 11 countries where the Safety and Health Document is submitted), national legislation requires the Safety and Health Document is “approved / accepted” or “consent” given by the regulator. There is variability on (and if) what is reviewed by a regulator prior to letting an operator initiate an operation (e.g. drilling a well or starting up a production facility). For the countries where the Safety and Health Document is submitted, the regulator reviews it for one or more of the following:</td>
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<tr>
<td></td>
<td>• Completeness.</td>
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<td></td>
<td>• Quality.</td>
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<td></td>
<td>• Acceptability of level of safety.</td>
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<td>• Other aspects.</td>
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The UK was the only regulator to remark that their review process goes beyond the elements identified above. They made the statement that they “feel strongly that operators should not start drilling operations until they have demonstrated to the regulator: that they identified and assessed the risks and are taking appropriate steps to control them; and will comply with relevant safety legislation.”

The gap analysis concluded that “regulators should identify and enforce safety-critical points in key areas that warrant explicit review and approval before operations can proceed” (GAC19).

It should be noted that during interviews some of the other countries explained that they do have processes they follow to approve an operation to start. Also they explained that they can request relevant safety and health documentation any time and undertake similar reviews to those for countries requiring submission of the Safety and Health Document. If and when they do this will be based on their prioritisation of their enforcement efforts. It may be after an operation has started.

In addition to reviewing the safety and health document (or equivalent), some regulators review other documentation such as details of the design of the well and / or production facility as part of their enforcement activities.

The above describes what the review learnt with a bias prior to starting drilling and new production operations. There is also the case of how “major changes” are handled.

For a “major change” some countries said there was no need for the regulator to be notified of such changes, of others enforcement was typically dependant on the magnitude of the change. To quote the Norwegian regulator; “Consent … is required in some situations (at key milestones/stages), but not all. Consent is required before a facility is put into service (and must be given in sufficient time to allow regulatory review), for major modifications, any changes that have an impact on the safety and working environment, (also drilling depth of more than 200m, exploration drilling, underwater operations and disposal operations).” Hence there is a need in some, but not all, countries for major changes to be notification to the regulators with ratification prior to operation in some cases.
### 6.1.2.2 Enforcement during activity

#### Findings and discussion

During drilling activities, the regulators in some countries require operators to submit drilling information, see Section 6.1.1.4.6. The regulator then undertakes a desktop review to ensure that the drilling is taking place according to the plan (as submitted prior to starting the drilling). If there are deviations these can be discussed with the operator during the drilling process and any corrective actions agreed.

Where submission of the drilling reports is required, the frequency with which they are submitted varies between countries. Clearly the more frequently it is to coming through the quicker can be the regulator can review and respond, however this also requires greater regulatory resource to handle. If the drilling information comes through less frequently (or not at all in the case of countries where submission of this information is not required) then there is greater reliance on the operator to report deviations from plan and to discuss them with the regulator.

In addition for drilling, production and other activities the regulators can undertake inspections. It was clear from the interviews that these are generally "announced" inspections, with unannounced inspection occurring only occasionally. From the survey only two countries (out of 24), Czech Republic and Iceland, have indicated that they only undertake “unannounced” inspections. In the case of the offshore side of the industry it is difficult to undertake “unannounced” inspections as in most cases the regulator relies on the operator for transport to the offshore facility. A few countries (five) indicated that they only undertake announced inspections.

Regulators indicated that they plan their inspection activities in advance typically developing themes for the focus of inspections on an annual basis. The themes are identified considering recent accident experience in the industry, learning from other sources (e.g. what has happened in the jurisdictions of other countries) and taking a risk based focus (i.e. seeking to focus their inspection time on what they judge to be significant risks and their controls).

During interview countries which did not require submission of the Safety and Health Document (or equivalent), e.g. Romania, did say that an inspection would commonly start by requesting this document. They would also use the document to identify what the operator has identified as most important to managing the operations risks (safety critical controls), and would then focus their
<table>
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inspections on these. Aspects mentioned in interviews that can be covered in an inspection included: progress with actions from previous inspections, accident investigations, safety critical aspects / controls, the psychological working environment, fire prevention and protection, safety and health management systems, maintenance logs, safe permits to work, management of change procedures, etc.

It was also learnt from all countries interviewed that typical inspection activities are undertaken including reviews of documents, checking records (e.g. inspection and maintenance records, permit logs and training records) and physical inspection of equipment.

In terms of who does the inspection this can be either national or regional government organisations. For example in Germany, Italy, Romania and Spain the regulators regional offices lead the inspection activities. In other countries (e.g. Denmark, Netherlands, Norway and UK) the inspections were undertaken by a central group. In countries with smaller mineral extraction through drilling operations (e.g. Ireland and Cyprus) they have the challenge of building and maintaining auditors with good industry knowledge. To deliver their inspectors will cover a broad range of industries (whereas countries with larger mineral extraction through drilling tend to have more specialised inspectors, e.g. Netherlands, Norway, and UK). To support them as regulators, access to experienced regulators and independent experts is important. It should also be noted that even in the countries with larger mineral extraction through drilling industries regulators did express challenges in retention of inspectors. This was generally said to be driven by the operators having higher pay scales than the regulators.

Site inspection frequencies vary between country and whether the mineral extraction through drilling activity is onshore or offshore. Examples of the differences are as follows:

- Greece and Ireland inspect facilities (drilling and production) once per year.
- Poland inspects the offshore activities once a year and onshore activities 5 times a month. There was also the opinion express that “It would be desirable if more inspections could be undertaken as the current level is somewhat limited”.
- Romania inspects offshore drilling and production once per year per economic operator, for production facilities. For onshore facilities they inspect the drilling operation 3 times per year per economic operator and the production facilities twice per year per economic operator.
- Portugal inspects their onshore drilling facilities 3 times per year for each project and their production facilities once per year for each project. (No offshore activities)
- Sweden inspects their onshore drilling and production facilities 2 to 4 times per year
- Austria, Lithuania, Norway and UK have no set frequency. Austria, Norway and UK say that they determine what to inspect and when on a risk basis.

From the above it can be seen that in some countries and parts of the industry there are regular frequent inspections (multiple time a month) and others take a risk based approach, which for low risk facilities could, for example, mean they receive an inspection once every few years.

The UK highlighted that where there are generic safety matters of concern being identified by inspectors then the regulator will issue safety notices to forewarn the duty holders of potential dangers so that they can proactively address them. In the main these were said to deal with hardware-related issues, hazards and controls.

In the interviews the power of the inspectors in all countries generally covered the same range of options. This extends from identifying opportunities for improvement and agreeing with the operator they would address them, to formal notices (e.g. for non-compliance with legislation), and ultimately to the power to prohibit an operation.

In the UK, the regulator has set out in a guide on how they go about enforcement so as to ensure consistency in enforcement decision making by different inspectors. The guide sets out principles
MANAGING RISK

### Theme: Enforcement during activity

**Enforcement during activity**

Objective: 1, 2, 4
Scope Requirements: a, b
Questions: 33, 34, 35

for enforcement which states that they have to be proportionate, targeted, transparent and accountable in all their actions. The industry stakeholders in the UK were positive to this saying that in “their experience of enforcement is … firm, fair and professional”.

Inspections are a key interface between the regulator, operator and workers, hence the way in which inspections are undertaken and followed-up does also influence the “culture” around safety. This aspect is discussed in Section 6.1.3.3.

### Conclusions

In some countries operators are required to inform regulators on the progress of their activity in an ongoing manner. The regulator then monitors the progress and can take action if concerned.

In all countries the regulators inspect mineral extraction through drilling activities. There is some variability, e.g. on whether inspections are announced or unannounced and on the frequency and the basis for the inspection frequency (risk based vs. periodic), and there are some general consistencies, e.g. the scope coverage items and the enforcement powers.

Small countries have challenges in developing and maintaining industry knowledgeable inspectors, and larger countries also expressed their challenges in retention of their experienced inspectors.

Regulators proactively sharing generic learning from inspections with operators and unions is seen as good practice.

### Recommendations

- The Commission should consider developing guidance on good practices with regard to inspection activity (e.g. Risk based inspection). They should also consider developing guidance (or adopt/endorse/build upon existing guidance documentation in this area, e.g. that developed by the UK HSE) to help get consistency in decision making by inspectors across the EU and EEA countries.

- The Commission should work with the regulators across the EU and EEA countries to share learning from inspection programmes.

- The Commission should look at ways to support the regulators (especially those in countries with limited mineral extraction through drilling industries) to train and build their inspectors so that they have relevant industry knowledge to be effective in their job.

### 6.1.3 Engagement

It is recognised that if the directive is implemented in a “compliance” vs. “non-compliance” mode only then it will not be as successful at achieving its ultimate goal of protecting the industry’s workers. It will drive a “compliance” or “tick-box” culture not a safety culture.

The directive and country legislation create a structure / mechanism to help support building a good safety culture along with the management systems of companies. The actions of the shareholders’, especially their leaders will influence the motivations of individuals and hence the behavioural norms.
How the legislation is implemented and enforced (see Section 6.1.2), and how the stakeholders all work together to promote, enable and improve safety will influence the “safety culture” in the industry. This section is covering:

- The supportive actions of the regulators.
- The way the primary stakeholders (regulator(s), industry and unions) engage with each other at the national level.
- The engagement at the operating level, including workforce engagement.

### 6.1.3.1 Regulatory support (guidance, etc.)

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<tr>
<th>Theme</th>
<th>Regulatory Support (guidance, etc.)</th>
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<tbody>
<tr>
<td>Findings and discussion</td>
<td>The gap analysis identified that “non-mandatory guidance should be issued to support industry in key areas where more clarity is needed as to the legislative intent” (GAC18). For the majority of countries that responded to the survey, guidance and similar documents are available to assist in complying with the legislative requirements. Based on the interviews it appears that the magnitude of regulatory support material available in a country is related to the magnitude of the industry, especially the oil and gas industry, and the age of the industry; countries with large and mature oil and gas industries having the largest amount of material available (fundamentally because the revenue from the industry enabled the creation of the support materials). A few of the countries not interviewed have indicated that they have significant guidance available. Some of the countries with small less mature industries, where stakeholders were interviewed, said that they made use of materials from the countries with larger industries.</td>
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</table>

![Figure 6.12 Availability of Guidance to Support Industry to comply with National Legislation Implementing the Requirements of Directive 92/91/EEC](image-url)
Some of the “other” sources of guidance referenced included materials developed by “joint stakeholder” groups, the “IADC HSE case guideline”, guidance from other countries regulators, and international standards / guidance.

It was also clear that the industry used international standards to support them in meeting legislative requirements and in protecting workers. In some countries the regulators has a list of standards that they formally recognised as delivering to the requirements of the legislation. It was noted that the “approved” guidelines and standards, although they may have delivered a similar level of safety, were general different in each country. The differences do create some barriers for the industry.

The need for guidance was seen by all interviewed. The challenge was the resources to produce and make it available.

The general picture was that the regulators were available to help industry to understand the requirements of their legislation and how to comply with it. (Engagement is discussed further below). Also the presence of internal stakeholder networks within the industry and the workforce — which aided the sharing of approaches to delivering safety—clearly came through in the interviews.

<table>
<thead>
<tr>
<th>Theme</th>
<th>Regulatory Support (guidance, etc.)</th>
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<tr>
<td></td>
<td>Some of the “other” sources of guidance referenced included materials developed by “joint stakeholder” groups, the “IADC HSE case guideline”, guidance from other countries regulators, and international standards / guidance.</td>
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</table>

Conclusions

There is support (verbal and written) available in many EU and EEA countries. The countries with newer, smaller or lower risk industries are more likely to not have any guidance. The availability of guidance was seen as important in protecting workers and helping successfully achieve compliance with legislative requirements. The guidelines and standards used vary between countries. This does create some barriers for those moving between, or duplication for those operating in, more than one country.

Recommendations

- The Commission should consider developing guidance on what is required to deliver to the requirements of the directive.
- The Commission should consider how they can assist countries to come to agreement on “acceptable” guidelines and standards for delivering to their legislative requirements.

6.1.3.2 National Level Engagement

The manner in which the leaders and experts from the primary stakeholders engage with each other sets the “tone at the top” for safety. This section looks at how these stakeholders engage and work with each other.

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<th>Theme</th>
<th>National Level Engagement</th>
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<tr>
<td></td>
<td>In the majority of countries there are forum at which the primary stakeholders (regulator(s), industry and unions) meet / work together. The relative formality varies. Of those interviewed Norway had the most structured and formal system, including the requirement in for tri-party meetings / working built into their legislation.</td>
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**National Level Engagement**

<table>
<thead>
<tr>
<th>Theme</th>
<th>National Level Engagement</th>
<th>Objectives: 1, 2</th>
<th>Scope Requirements: 1.18</th>
<th>Questions: 1.18</th>
</tr>
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</table>

**Figure 6.13 Frequency and formality of meetings between primary stakeholders (regulators, operators and unions)**

It should be noted that the manner of engagement varied from, working in partnership style, to more traditional consultation. Norway gave examples of how their recent update to their national legislation was developed in a joint manner, whereas others described a process where the engagement was through issuing a draft of the legislation and seeking written comments.

The most involved engagement was always described for the oil and gas industry. In this mineral extraction through drilling industry there was evidence from countries with a significant oil and gas industry of stakeholders working together in partnership to improve safety. For the other mineral extraction through drilling industries, and countries with smaller oil and gas industries, the consultation (i.e. push from the regulators to the other stakeholders to seek input on what they are proposing) approach appeared to be the common practice. The more consultative / joint working approach was seen as preferable by stakeholders. It is recognised that where the industry is small a consultative approach is perhaps more challenging due to the increased level of time required and the need for relevant expertise in representative organisations.

A range of areas where engagement was described as taking place included, sharing learning from accidents, monitoring / reviewing safety performance / trends in the industry, writing of guidance, open discussion on topics of concern and working on the development of legislations. One examples of a stakeholder groups working together to improve safety is the work in the UK to produce the guidelines on competency for wells personnel by the Well Life Cycle Practices Forum. Their work involved people from drilling and service companies, academia, training organisations and the trade unions.

The style of engagement (whether formal or informal) where engagement was early, inclusive and involving of all stakeholders was seen most positively by all stakeholders as it build trust and supported a good safety culture.

It was clear that the people interviewed had perceptions on where engagement at the national level was working best. It came across that there is a trend to greater engagement and collaborative
### National Level Engagement

**Objective:** 1, 2  
**Scope Requirements:** a  
**Questions:** 1, 18  

<table>
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<th>Theme</th>
<th>National Level Engagement</th>
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<td>working between the stakeholders which was seen positively, even though some clearly wished that the change would be faster and desired the level of engagement in the leading countries.</td>
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| Conclusions | Engagement styles vary from regular collaborative sharing and working to undertaking on an as needed basis consultations. With countries at all points along this spectrum. Also there is a trend to more consultation / joint working between stakeholders. |

|          | The countries with the largest oil and gas industries presented the most active and consultation / joint working engagement activities. |
|          | Where the engagement was the most consultation / joint working the stakeholder were most positive about its benefits. |
|          | For countries with smaller mineral extraction through drilling industries there is a “critical mass” challenge to overcome having a significant consultation / joint working engagement between all the stakeholder organisations. |

| Recommendations | The Commission should support engagement between stakeholders across Europe. This should seek to bring together stakeholders from the countries with small mineral extraction through drilling industries with others. |

### 6.1.3.3 Operating Level / Workforce Engagement

This section looks at various ways in which there is engagement at the operating level and engagement of workers to support safety and build a positive safety culture. It includes discussion on how inspectors interact with operators and workers, the role of safety representatives and safety committees and ability to for workers to report hazards and accidents.

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<th>Theme</th>
<th>Workforce Engagement</th>
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<td>Whilst it is generally accepted that a good safety and health culture is driven by the leadership of an organisation (especially the CEO), in the interviews a primary factor identified as driving a good safety culture in a facility/mineral extraction site is the facility manager. In the particular instance of offshore platforms which are often located in remote and isolated locations, the role of the offshore installation manager (OIM) was seen as key. This came through as a clear message from the interviews with all stakeholder types. The factors discussed below are all influencers on the safety culture.</td>
</tr>
<tr>
<td></td>
<td>How the inspectors interface with the personnel on the facilities they inspect will influence the safety culture. If inspections are compliance /non-compliance focused then they will drive a compliance culture, and a good compliance culture does not necessarily mean a good safety culture. We did get an example of this when reference was made in an interview to facilities being prepared for inspections. Examples given were systems, which had not been working properly, being put into “good working order” and arrangements being made for the safety representatives to be away because the inspection was scheduled. Inspectors need to use options beyond issuing “non-conformances” to work with and help operators and workers to meet the objectives of the legislation and to see them as goals that are also beneficial to them.</td>
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</table>
|       | Inspectors also need to have a good safety culture themselves, and to recognise that their behaviour will influence the safety culture on a site. From the interviews it was clear regulators see that when at a site they need to conform to both the expectations of their employer and those of the site. One example of an inappropriate behaviour was given where an inspector was said to have refused to go through the site induction. This was also said to have been immediately addressed by the regulator management as soon as they were informed. What is clear is that if the inspectors do not respect the safety management controls of an operator, there is lower likelihood of expecting the workers to value and to conform to them. (Note this was an isolated example heard and is purely presented to
Theme: Workforce Engagement

**Objectives:** 1, 2  
**Scope Requirements:** a  
**Questions:** 1, 18

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**Theme:** Workforce Engagement

illustrate the importance of good safety behaviour by regulators helping drive good safety behaviour by management and workers at a facility.

All countries interviewed indicated that, where the organisation was sufficiently large, they have workers taking the role of “safety representative” at the mineral extraction through drilling facilities. However there were differences in who and what time they were given for this role:

- In some countries (e.g. Poland) there is one worker representative who has safety as one of their worker representative responsibilities. This was seen by stakeholders as being weak in terms of supporting safety, as the worker representative was more focused on the compensation side of their role.

- In some countries (e.g. UK) they have a safety representative who has safety as an additional activity on top of their day job. This allows the representative to focus on safety however the issue of if they have the time to contribute fully is challenged.

- In other countries (e.g. Norway of their offshore industry) the safety representative is a full time role. Here they clearly have both the time and the focus, however there is added cost.

Safety representatives do receive training when they first take the role, however it has been recognised that this is not building the competencies they need and this has recently led to the development of 4 new formal courses (that will be delivered by recognised training providers). To support the safety representatives to build their knowledge further.

Having a safety and health committee was also common practices (with the safety representatives being one of the members). This committee provides a formal point for worker engagement with management to drive good safety performance. Some challenges were expressed for the safety representative attending all meetings in the offshore environment where they are working, say two weeks on and two weeks off. If they are off when the meeting takes place they miss it. Onshore this was not raised as an issue during the interviews.

For the workers as a whole, engagement on safety in a formal manner includes the practice of defined safety training for different roles and providing this training, along with other activities typically defined by the operator’s safety and health management system and practices. The gap analysis identified (Gap Analysis Conclusion 8) “informing workers about their potential contribution to hazards identified in the safety and health document” as an area where the directive could be enhanced through an update of its specific requirements.

The ability of workers to report directly to a regulator any safety issue of concern was discussed in interviews. In some countries there were statements that such reporting has happened. In others no examples were given. This probably reflects a difference in (safety) culture. Stakeholders were asked if there was an anonymous reporting system provided by the regulator. The majority of regulators do operate such systems, see Figure 6.14. From the interviews the formality of the system may vary.
## Theme
- Workforce Engagement

### Objectives
1.  

### Scope Requirements
- a

### Questions
1, 18

<table>
<thead>
<tr>
<th>Country</th>
<th>Regulator runs an anonymous reporting system available</th>
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**Figure 6.14** Countries where the regulators have set up a system for workers to report safety accidents and concerns to them on an anonymous basis

There was discussion on the ability to keep a person’s “anonymity” as the follow-up can often expose the person. Hence although having an anonymous reporting system supports reporting, there is a need to build an open culture that welcomes the reporting of incidents and avoid blaming the messenger.

## Conclusions

The workforce, for the most part is engaged with on matters relating to their safety. However there are differences in how such engagement is approached, especially in terms of how much primacy is given to safety concerns and the amount of resources dedicated to make this happen. Generally, speaking the approaches adopted in the North Sea countries are considered to lie on the “leading edge” of workforce engagement spectrum, especially the use of full time safety representatives in Norway.

Inspectors need to be trained to use a range of options to work with operators to get them to improve (beyond issuing non-conformances).

In ~ 70% of EU and EEA countries the regulator runs an anonymous report scheme to encourage workers to report safety accidents and concerns.

## Recommendations

- The commission should set up initiatives that bring together the various stakeholders across the various countries’ as means to help them learn from one another.
- The commission should ideally set out a best-practice model for what it considers to constitute acceptable levels of workforce engagement.
- The commission should develop guidance on the role and responsibility of a safety representative, including providing an outline of the competence they need to build and the effort level expected from them in the role.
6.2 Effectiveness
This section discusses the feedback that has been received on the effectiveness of the national legislation and the directive from stakeholders. It also looks at the safety performance drawing on published safety performance information. The effectiveness is first discussed for the national legislation and then for the directive.

6.2.1 Effectiveness of National Legislation
This section presents the health and safety performance of the industry and views on the effectiveness and efficiency of the national legislation that implements the requirements of Directive 92/91/EEC. The performance is based on published accident data, the efficiency and effectiveness is based on feedback from the interviews and survey. The review did seek numerical data on the level of effort that has to be expended to comply with the national legislation. Although one country (the UK) did estimate this (see Appendix V), it was not readily available.

6.2.1.1 Incident / accident data and trends

<table>
<thead>
<tr>
<th>Theme</th>
<th>Incident / accident data and trends</th>
<th>Objectives: 3, Scope Requirements: c, Questions: 9, 10, 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Findings and discussion</td>
<td>Safety performance data explicitly for the mineral extraction through drilling industry is not readily available for all EU and EEA countries. In general the mineral extraction through drilling industry data is published for an industry class (e.g. all mining); however, for some countries there is data available for the oil and gas industry. Drawing on the available data, the safety performance for this industry is discussed here from three key issues pertaining to the safety and health of workers, namely; occupational illness, occupational accidents and major accidents.</td>
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**Occupational illness**
Trends in occupational illness are unclear. Occupational illness for the mineral extraction through drilling industry appears to be less significant than occupational accidents and major accidents as a concern. Instances of occupational illnesses observed in the sector include:
- Occupational skin disease.
- Hearing impairment.

**Occupational accidents**
The data for occupational accidents shows a falling rate across most countries. It can be said that the rate fell most about a decade ago and has been steadier more recently (see Appendix VI).
Where it has been possible to compare the accident rates for the mineral extraction through drilling industry it can be seen that it performs well when compared to other industries. This was found to be the case in Poland and the UK (see Appendix VI).

**Major accidents**
Major accidents, such as Piper Alpha and Deepwater Horizon, are, by their nature, rare. Since Piper Alpha there have been no “major accidents” in the mineral extraction through drilling industry in EU and EEA countries; however there have been near misses. Although there have been no major accidents, and the directive and associated national legislative environments may have helped deliver this success, it is not prudent to draw this conclusion from the absence of such accidents alone. The review has therefore looked at the trend in a potential indication for a subset of the major accidents. The countries with the most significant oil and gas offshore industries have done this to some extent; most have data on “uncontrolled hydrocarbon leaks”. Norway has taken a broader range of indicators...
to create a measure of the trend in major accident risks. In general the trends show a reduction in the major accident risk indicators over time:

- The Danish data shows a long term reduction over the period 2005 to 2011 (DEA, 2011). Looking at the details shows that, although there has been a small increase in “significant releases” from 2008 to date the current rate is a marked reduction from 2005 to 2008 level.
- Netherlands: The data for significant and major gas releases shows a downward trend 2003 to 2010 (Staatstoezicht op de Mijnen, 2011).
- Norway: In Norway the PSA has sought to take a broad view of the major accidents and has tracked a range of indicators for major accidents (PSA, 2012). This shows a downwards trend in recent years, see Figure 6.15.

![Figure 6.15 Total indicator, production facilities, normalised against man-hours, annual values and three-year rolling average in Norway](image)

- The UK data, from 1996/7 to 2011/12, shows a long term reduction in the number of major and significant uncontrolled hydrocarbon releases. For minor releases there is an increasing trend over the first half of the period and a fall off (approximate halving) since 2004/2005.

Details on the above are presented in Appendix VI.

**Conclusions**

Key risk indicators show the safety performance within the oil and gas industry has improved over the last decade (and continues to do so). However, there are still instances that result in actual (or potential) harm to the workforce (the recent gas leak on the Elgin Platform is one such example of a near miss). Consequently, it is clear that more can be done to ensure that the safety and health of the workforce is safeguarded as far as is reasonably practicable.

**Recommendations**

- The EU should consider avenues by which the safety performance in the industry can be improved beyond current levels. The directive (and this work that seeks to evaluate it) are helpful in this regard. In addition to establishing and improving legislation that seeks to protect workers, consideration should be given to implementing measures that will aid those tasked with delivering it (i.e. the regulated parties) as well as those who administer it (the regulators/state authorities). One way is via the development of forums that aid information dissemination (and thus learning) across the various EU and EEA countries.
### 6.2.1.2 Effectiveness of National Legislation - Judgement / perception

<table>
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<tr>
<th>Theme</th>
<th>Effectiveness of National Legislation - Judgement / perception</th>
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<tbody>
<tr>
<td>Findings and discussion</td>
<td>There were some very positive comments on the effectiveness of national legislation in different countries.</td>
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<td>• The UK industry for example said it was “a world-class regime” and they, and the UK regulator, made reference to the reports by the Energy and Climate Change Select Committee (UK House of Commons, 2011) and Maitland (2011) which concluded that the UK regime is robust.</td>
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<td>• Similarly the industry stakeholder for Cyprus said “… the regulatory regime is considered very thorough and detailed. The interactive process with the regulator is liked as it makes understanding the requirements very easy.”</td>
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<td>• Norway union said that their regime “has resulted in a safe working environment within the industry”</td>
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<td>• The Irish industry operator said that they “considered [the legislation] to be very effective in safeguarding the health and safety of workers in this sector; it sets out clear guidelines on what needs to be achieved, roles and responsibilities are clearly defined, enforcement activity by the HSA is … robust”</td>
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<td>• The Dutch unions said of their regime that “it helps to maintain a high level of safety, … to increase the level of awareness / safety consciousness amongst the employees and employers”, and that “the regime is dynamic and constantly improving; hence safety standards will remain high.”</td>
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It is clear that the regimes in Europe are seen positively by a range of stakeholders.

It was recognised that all stakeholders should not be complacent and in many regimes a process of continuous improvements is seen as important in an on-going drive for improvement and “zero” harm. To maintain effectiveness going forward an Ireland industry sees “clarity in the legislation” and the “avoidance of overlap” as essential to the effectiveness. This was raised with discussion on the proposed legislation from the Commission and a request that DGs “come together to address any potential areas of overlap between the directive and the proposed offshore legislation”. They also would like to see more constant follow up of the transposition process by the Commission to aid consistency across countries.

### Conclusions

The stakeholders interviewed were of the opinion that the legislation systems within which the industry operates are effective. Their responses also clearly indicated a need to maintain a focus on managing safety in their industry and to strive for zero harm. Hence they were supportive of learning from continuous improvement.

### Recommendations

• The Commission should compare their directives and the proposed legislation. Where there is an overlap they should produce guidance to explain the differences in scope between the directives / legislation and how they work together.

• Working with a cross section of stakeholders from the EU and EEA countries, the Commission should put in place a continuous improvement process. This should help, not only with changes to guidelines and legislation, but should also support a drive for consistency across Europe.

### 6.2.1.3 Compliance costs - national legislation

This covers the costs involved with meeting the requirements of the directive. This review asked about the costs with a view of whether they are acceptable (i.e. proportionate to the benefits) or a burden, (i.e. disproportionately high compared to the benefits gained.)
Findings and discussion

Through the interviews and from the survey it is clear that the vast majority of stakeholders see the burden of complying with the national legislation that implements the requirements of Directive 92/91/EEC as “appropriate and acceptable”. Some additionally saw it as raising the safety standard above what would be delivered by industry standards alone. Only one stakeholder surveyed said that they saw the burden to comply as “excessive” or “unnecessary”.

Figure 6.16 Views on the burden from the national legislation that implements the requirements of Directive 92/91/EEC

This general view of seeing the burden as appropriate and acceptable can be illustrated by the statement of some of those interviewed:

- “The burden is acceptable as it is seen as helping to deliver safety”, an industry stakeholder from Poland.
- “The current system achieves the right balance between cost and safety especially as the trends are going down”, union stakeholders in the Netherlands.
- “Current effort as proportional to the level of activity”, French regulator.
- “No real issues have been identified that related to the burden of the legislation”, Polish regulator.

There were some comments from industry related to the number of government departments they have to liaise with. In one case (Norway) this was a request for “harmonisation of reporting protocols across different government departments” in another (Cyprus) the statement was positive; “very useful to have one single point of contact”. Clearly where the contact in and communications to the regulators can be coordinated this is seen positively by industry.

There was caution in regard to the potential impact on burden from changes related to both changes in legislation. This was as expressed by:

- The Irish regulator as follows; currently “… not seen as burdensome to HSA. Might change in
6.2.2 Effectiveness of Directive 92/91/EEC

This section presents the views on the effectiveness and costs of compliance associated with Directive 92/91/EEC. The findings are primarily based on the interviews.

6.2.2.1 Effectiveness of Directive 92/91/EEC – Judgement / perception

Effectiveness can be viewed from several points of view. For example, effectiveness can be for:

- Helping protect workers in the mineral extraction through drilling industry.
- Helping regulators to put in place a national legislative scheme.
- Helping to deliver consistent legislation across all EU and EEA countries.

For the first, although there have been improvements in the safety performance (see Section 6.2.1), stakeholders were generally not able to make an assessment on the specific contribution of the directive on the safety of workers. This is because the directive is one step removed from the legislation under which the mineral extraction through drilling industry activities take place, and is only one element that creates the legislative environment. For the North Sea countries there is the general view that their legislation and the legislative environment that has been created now goes well beyond the requirements of the directive.

In terms of the effectiveness in putting in place legislation, the responses fell into two main groups (as explained in Section 6.1.1.1):

- The first was from those who had in place legislation and a mature oil and gas industry that had taken on the learning of major accidents in the North Sea (namely Alexander Kjelland and Piper Alpha) early. They saw the directive as providing a checklist that helped them review their legislation when the directive first came into force.
- The second group were countries which had used the directive as the basis for their legislation had commented that it allowed that to put in place legislation in an efficient manner.

In terms of delivering consistency there are both similarities and differences in the national
The directive has helped, especially for countries where new mineral extraction through drilling activities are taking place, or where their legislation had not yet taken on board the learning from major accidents.

An indication on improving the effectiveness can be seen by the level of stakeholders who judge that the directive needs to be improved for today’s world. About a third of respondents to the survey and the majority of countries interviewed did say that they would like to see changes made to the directive. Those proposing improvements are generally coming from countries with a significant oil and gas industry. From the interviews the drivers for the proposed improvements were to improve the protection of workers and to deliver a more consistent legislative environment across EU countries. Some of the ideas for improving the directive include:

- Bringing in many of the concepts from the proposed legislation which draws on learning from the experiences for the legislative systems for offshore oil and gas industries in the North Sea. This would also align the directive with the proposed legislation and help them to work together.
- Increasing the emphasis on major accidents.
- Removing many of the “prescriptive” items in the directive and putting them into supporting guidance documents (e.g. those outlined in Item 7 of Part B relating to sanitary equipment).
- Including requirements on the legislators in the directive.
- Restructuring the directive to address the hazard types separately, i.e. to have separate sections on occupational accidents and illness and major accidents.

All stakeholders said that they want the directive to remain as a directive and not to change its legislative form (i.e. to become either an EU regulation or to become simple guidance).

Another question that the review sought to answer was what else (beyond modifying Directive 92/91/EEC) the Commission could do to improve protection of workers in the mineral extraction through drilling industry. Here more than half of the countries expressed a desire for action. The area with the greatest request for the Commission to address was the development of guidance documents which:

- Provide guidance to regulators on how to:
  - Introduce legislation to implement the requirements of Directive 92/91/EEC.
  - Set-up and run the associated legislative, enforcement and supportive activities that help enhance the legislative environment to drive continuous improvement in safety.
- Explain the boundaries of between Directive 92/91/EEC and other directives and international legislation.
- Clarify the scope of the directive.

Other areas where it was seen that the Commission could assist include:

- Supporting groups setting guidelines and standards for the industry, as this is seen as the fastest means for getting learning reflected in the practices of the industry.
- Working with regulators in different countries to gain greater consistency between countries by getting agreement on what guidance and standards are recognised by the regulators in different countries as supportive of meeting the directives.
- Supporting the ability of regulators to gain knowledge from each other, e.g. by supporting EU/EEA forum to share learning or by secondment or exchange of personnel between countries.
- Support the key stakeholders (regulators, industry and unions) to discuss and share information.
### Conclusions

The stakeholders interviewed were of the opinion that the regulatory systems within which the industry operates are effective. Their responses also clearly indicated a need to maintain a focus on managing safety in their industry and to strive for zero harm. Hence they were supportive of learning from continuous improvement.

A third of countries (predominantly those with a significant oil and gas industry) would like there to be changes to the directive. More than half of the EU and EEA countries also expressed a desire for the Commission to take other actions to support countries with their implementation of the directive. The types of changes are presented above, more detailed suggestions can be found in the interview notes, see Appendix V.

### Recommendations

- The Commission review and update the directive to reflect current good practice.
- The Commission undertake actions to provide guidance which supports the directive in EU and EEA countries.
- The Commission initiates actions to support gaining consistency across Europe and to enable sharing of knowledge, experience and learning amongst regulators, industry and unions.

### 6.2.2.2 Compliance costs – Directive 92/91/EEC

#### Findings and discussion

From interviews it came through that international companies see their own safety management systems as being in accordance with the approach followed by the directive, and these companies feel their requirements often go further than those required by the directive. This general perception of the burden of the requirements of Directive 92/91/EEC can be summed up by a quote for the Romanian Industry representatives interviewed; “the administrative burden of Directive 92/91/EEC is considered negligible, relative to what the company would do anyway”. It should be noted that this statement came from an international oil company and hence they are comparing against their own standards.

For the same country stakeholders indicated that complying with the requirements of the directive had helped local SME companies put in place H&S management systems that conformed with international standards. As a result these companies have achieved overseas sales (which previously they could not).

Note that, at the EU level, the question of burden was only asked of Directive 92/91/EEC, the situation in regard to other European legislation of the mineral extraction through drilling or other industries was not investigated.

#### Conclusions

The effort to meet the requirements of Directive 92/91/EEC is proportionate to the value delivered in terms of safety. Therefore the current approach is not posing an excessive burden.

It is important that the commission address how the proposed legislation works with the directive to ensure that it does not result in duplication and hence an unnecessary burden.

#### Recommendations

- Any changes should seek to maintain situation where the administrative burden is “appropriate and acceptable” by all stakeholders.
- The Commission should work to make sure that it is clear how the proposed legislation and directive (and its associated national legislation) are to work together in such a manner that there is no overlap resulting in duplication or unnecessary activity. This could be in the form of guidance that is issued with the proposed legislation and is tested with EU and EEA countries.
7 RECOMMENDATIONS

This section presents the recommendations of the review derived from the conclusions and discussion presented in Section 6.

7.1 Question 1 - Are changes needed to the Directive?

Conclusion from this review: Yes.

Based on the findings of this review, DNV has concluded that Directive 92/91/EEC should be updated to reflect current good practice and to fit with other existing and proposed directives / legislation of the EC.

It should be noted that this conclusion is drawn recognising that:

- There is a split in the countries’ views on the need to update the directive. For the most part, stakeholders in countries with sizable oil and gas mineral extraction through drilling industry hold the view that the directive should be modified (also, see Section 6.1.1.1).

- The safety performance (in terms of the reported accidents) in the EU and EEA countries since the introduction of the directive has been improving and the performance is good compared to that of other hazardous industries (It is recognised that such improvements are not solely attributable to the directive). In addition, there have been no major accidents with multiple fatality / injury such as the ones which drove the introduction of the current goal oriented regulatory systems in place in the North Sea countries (namely Alexander Kielland and Piper Alpha) as well as Directive 92/91/EEC. Nevertheless, the stakeholders strongly expressed the importance of continuing to drive for improvement in safety performance to achieve the goal of zero harm to potentially exposed persons (also, see Section 6.2).

- Industry good practice has moved on from what it was in 1992 (the year the directive was introduced). Likewise, national legislation in various EU member states / EEA countries that adopt the same design principles (e.g. UK, Norway, Denmark, Netherlands to name a few) have evolved/been refined further since then (for various reasons) to accommodate new learning’s based on on-going experience. However, Directive 92/91/EEC has remained unchanged since its introduction. It is recognised that the design ethos of the directive—by adopting a goal-setting approach as well as requiring that advances in technology be taken into account (by virtue of the framework directive) and used to deliver improved levels of protection with regards to workers’ health and safety over time—makes it quite robust to changes over time, both in terms of goals outlined and the safety performance it should help to deliver. It also means that the minimum standards set out therein (in terms of actual practice) are expected to evolve over time. Nevertheless, areas in which improvements can be made to the directive have been identified (also, see Section 6.2).
Closely linked to the above is the fact that there is no continuous improvement cycle in place to maintain the directive itself, to ensure it reflects changing circumstances, remains relevant and fit for purpose. Having such a system will ensure that the directive (and any documents that might be developed to support it) is kept current and up to date. It is noted that each member state is legally obliged to submit a report on the practical implementation of the directive every five years and that the commission uses this information as a basis for evaluating if changes to the directive are required. However, this process is periodical rather than continuous. It is also noted that provisions exist within directive (and the framework directive) to ensure that any work undertaken (e.g. risk assessments) is kept up to date and accounts for technical progress and changing circumstances (also, see Section 6.2.1.2).

The directive is perceived by several stakeholders to focus more heavily on “occupational health and safety” issues rather than “major hazard” accidents. It is recognised that the directive does cover “all hazards” to workers, which means that it does cover “major hazard” accidents as it is written today, however the balance of attention needs to be corrected (also see Sections 6.1.1.3.2 and 6.2.2.1).

The directive is limited in its requirements for control of hazards during drilling activities (related to mineral extraction). It is recognised that the directive’s risk assessment approach means that such risks should be covered and practices in many countries is to have their own requirements for drilling related hazards (also see Section 6.1.1.4.1).

There is proposed legislation on the safety of offshore oil and gas prospection, exploration and production activities (EC, 2012a), that seeks to address risks associated with major accidents in the offshore oil and gas industry. Given this there is a need to ensure clarity between the scope covered by Directive 92/91/EEC and the proposal so that they work together in a consistent manner and prevent duplicate requirements. (Also, see Sections 6.2.2.2).

7.2 Questions 2 - What changes are needed to the Directive?
If the EC agrees with DNV’s conclusion on the need to update Directive 92/91/EEC, then DNV would recommend a number of key elements are maintained whilst changes/updates are made in a number of areas.

7.2.1 Aspects of the directive to be maintained
In terms of elements that should be preserved, DNV would recommend that the directive should maintain the following:

R1.: Directive 92/91/EEC should remain a directive (and is not changed to a regulation or removed).

It was clear that the culture, legal systems and history of the different countries are different and that the directive approach allows the flexibility to implement EU legislation in a manner that fits a countries situation. Given that the legal basis only allows the adoption of directives in the field of health and safety at work (see Section 4), it is understood that the possibility of converting the directive to a regulation is non-existent. (Also see Sections 6.1.1.2 and 6.1.1.4.3).
R2. Directive 92/91/EEC should keep **its goal oriented approach**. The goal oriented approach is seen to have advantages of flexibility for the industry, driving continuous improvement, being fit for more challenging mineral extraction through environments (as well as less challenging ones) and being able to respond more quickly to learning (including from accidents). This approach can be supported with some prescriptive requirements which in some cases can either be incorporated directly within the directive or in external supporting guidance documents (the directive in its current format includes a number of prescriptive elements that are better placed in supporting guidance documents). Any prescriptive elements put within supporting guidance documents must be underpinned by a legal goal setting basis in order to maintain their basis in law. (Also see Sections 6.1.1.2 and 6.2.2.2).

R3. Directive 92/91/EEC should keep **the risk based approach**. This is important as the range of mineral extraction through drilling activities across the EU and EEA countries vary in their inherent level of risk. For example, offshore oil and gas in more extreme environments and deeper waters inherently pose a greater risk than onshore salt extraction. The risk based approach means that the activities undertaken by the industry to manage the risks (and the regulator to assure the risks are adequately managed) are proportionate to the level of risk; thus helping to ensure a situation in which legislation is not burdensome. (Also see Section 6.2.1.3).

7.2.2 **Aspects of the directive to be changed/updated**

In terms of changes to be made, DNV would recommend the directive should be modified:

R4. To **include current good practice** from the regulatory regimes in EU and EEA countries, including many of the aspects that have been taken on board in the proposed legislation for safety in the offshore oil and gas industry. It should be modified to **work with the proposed legislation on the safety of offshore oil and gas prospection, exploration and production activities**. (Also, see Section6.1.1.1, 6.1.1.4.6 and 6.2.2.1).

R5. Such that it can be **implemented in a manner that is proportionate to the inherent risk** of the mineral extraction through drilling activity (i.e. oil and gas vs. salt, etc.). The commission should also seek to maintain the situation where the administrative burden is “appropriate and acceptable” by all stakeholders. (Also see Section 6.2.1.3).

R6. To provide more clarity / be more explicit on the differences between “**Major Hazard Accidents**” and “**Occupational Health and Safety**” as perceived by the key stakeholders. To enhance this is it suggested that the directive has separate sections to address these areas. Note that these accident types need to be expressed so that it is clear that the directive covers the full range of hazards to workers in the mineral extraction through drilling industry. (Also see Sections 6.1.1.1, 6.1.1.3.2 and 6.2.2.1).

R7. To be made **more explicit regarding the management of drilling activities and well control**. (Also see Section 6.1.1.4.1).
R8. To **clarify the roles and responsibilities** of different parties involved in all stages of mineral extraction through drilling lifecycle. This should include addressing the roles and responsibilities of licensees, owners, operators, contractors, sub-contractors, workers, etc. and their means and responsibility to work together for safety. This is particularly important as the existing employer/worker model used in the directives appears limited and one-dimensional in the light of the complex network of players involved. Recognising that responsibility is assigned in different ways, using different principles and disparate terminology across the various member states, any definitions/conventions established should be broad / flexible enough to accommodate the situation across all the member states, especially in the regulation of major accident hazards. (Also see Sections 6.1.1.5 and 6.1.2.1).

R9. To **outline the structure and / or functions to be undertaken by the regulator**. It needs to be recognised that the activities undertaken by the regulator play a key role in ensuring the overall objectives of legislation are met (as the directive does not currently do so). Such recognition can take the form of non-binding **expectations for the regulator** (guidance documents) on enforcement of national legislation to implement the requirements of the directive, especially in regard to the regulation of major accident hazards. (Also see Sections 6.1.1.1 and 6.1.1.4.6).

R10. To include a specific requirement on the responsible party to have a **management system** to implement the requirements of the directive and to drive continuous improvement. It should also address the specific management system issues identified in the gap analysis (for example, see Section 6.1.1.4.1).

R11. To ensure the need to identify (through the risk assessment process) **critical equipment, activities and competencies** in delivering safety, and should include a requirement for follow on **verification** of the critical equipment, activities and competencies along with a **continuous improvement processes**. This should also include the expected level of independence (i.e. 2nd or 3rd party) for verification. It is acknowledged that Article 6, Para 3a of the framework directive alludes to the need to assure the outcomes of the risk assessment process. (Also see Section 6.1.1.4.5)

R12. To **remove elements** in the current directive which would better fit in **supporting guidance and standards documents** (e.g. those outlined in Item 7 of Part B relating to sanitary equipment).

### 7.3 Are Other Actions Needed?

Conclusion from this review: **Yes**.

Based on the findings of this review, DNV has concluded that the EC should takes actions, in addition to modifying Directive 92/91/EEC, to increase its effectiveness.

It should be noted this conclusion is drawn recognising that:

- It was not clear what the boundaries were between the directive and other EU directives / legislation (current and proposed), for example, see Section 6.1 and sub-sections).
For industry demonstrating compliance with national legislative provisions (including those stemming from the directive) in the various EC and EEA countries often involves fulfilling the requirements of defined practices and technical standards (e.g. BS, Norsok, OGP, etc.). The primary advantage of using technical standards is that they can be reviewed and improved (based on learning / experience) more quickly than the national legislation. The technical standards adopted across the countries vary (for a range of reasons) and this can lead to barriers / inefficiencies in working across borders (particularly for offshore mobile rigs) (for example, see Sections 6.1.1.2, 6.1.3.1 and 6.2.2.1). The directive (in its current format) does not make reference to any guidelines, practices or technical standards for use in the mineral extractive industries. Whilst it is evident that there are specific reasons that the practices and standards that apply vary (e.g. differences in geography and thus risk profile; artic versus the Mediterranean environments), developing more consistency (i.e. harmony) on the guidance, practices and technical standards used by countries (in areas that are not explicitly different) would help level the regulatory environments and assist industry in complying. Additionally this will enable companies to operate more easily across EU and EEA country borders. The EU supporting / facilitating the development of harmonised technical standards is not without precedent. It currently does so and a number of harmonised standards (EC, 2012b) have been developed which are presently in use for a number of economic sectors / products; none of which specifically relate to the mineral extractive industries. For example there are harmonised standards for PPE (personal protective equipment) and cranes.

For the most part, the national legislation across various EU and EEA countries are often supported with a series of documents that expand upon the legislative text and in particular explain how to achieve compliance (for example, see Sections 6.1.1.2, 6.1.1.3, and 6.1.3.1). These documents, often referred to as guidance documents, are a key component of the legislative framework in these countries, especially where goal-setting principles are in use. A key appeal of guidance documents (as for technical standards discussed above) is that they can be updated more readily/easily than the actual legislation. The directive does not currently have any supporting documents that can help to add clarity to the provisions contained therein.

Developing the guidance theme further, there are areas where the national legislation that implements the requirements of the directive has been interpreted differently in different member states. Guidance could assist in ensuring consistency across the countries.

There is a need to encourage learning between countries given their different level of experience with the industry (for example, the North Sea countries and Italy have a long and significant industry with oil and gas, whereas there are countries who have little experience and are new to this industry (such as Cyprus) (for example, see Section 6.1.1). Additionally, there are countries that are new in applying the directive with its goal oriented approach (such as Poland and Romania whose national legislation is traditionally more prescriptive). Beyond the industry, the need to encourage learning also applies to the national authorities (i.e. the regulators) as well as the trade unions. The commission can help facilitate this by supporting the creation of pan-European stakeholder forum along the lines of the recently created Offshore Oil and Gas Authorities Group (EU, 2012).

8 It is noted that there is European harmonised standard for pressure equipment and this will apply to any pressure equipment used in the mineral extractive industries.
7.4 Question 4 - What Other Actions Should be Taken to Increase the Effectiveness of the Directive

If the EC agrees with DNV’s conclusion on the need to undertake other options to enhance the effectiveness of the directive, then DNV would recommend the following:

R13. The commission facilitates and supports the development of guidance documents in support of the directive which:

a. Clarify the scope of Directive 92/91/EEC, including:
   i. Stating that all hazards to workers are to be covered, and defining “Occupational Health and Safety” and for “Major Hazards”. (This is in support of the way the directive has been interpreted by all countries consulted). (Also see Section 6.1.1.3.2)
   
   ii. The types of mineral extraction through drilling activity which are covered. This should address questions such as: “Are all drilling activities covered?”; “Is water a mineral?”; “What about geothermal?”; “Is taking a core sample mineral extraction?” It is recommended that the scope is clarified for types of drilling where the hazards to workers related to the drilling activity / production from the well are posed by the substance (mineral or other, e.g. water or CO₂) being extracted / stored or other substances which could be encountered. Note this implies that the EU and EEA countries should see it as acceptable and appropriate to have the scope of their National Legislation that implements the requirements of Directive 92/91/EEC extended to cover these areas, should it not do so already. (Also see Section 6.1.1.3.3).

   iii. The life cycle stages of the mineral extraction through drilling that are covered. Clarifying for example if seismic activities before any exploration drilling activity covered. (Also see Section 6.1.1.3.4).

   iv. The workplace assets covered (and, for what is not covered, what is the applicable directive(s)). For example are pipelines associated with a production facility covered? Or is a gas plant miles away from the extraction site covered? If not what are the directives that apply? (Also see Section 6.1.1.3.6)

   v. What is deemed as the boundary of the workplace under the directive. This is more important for offshore than onshore where there are differences between countries in for example if helicopter travel is under the directive or not. Onshore it was clear that inside the site boundary is the workplace. (Also see Sections 6.1.1.3.4 and 6.1.1.3.6)

b. Assist regulators:
   i. In what to do to setup and operate a legislative system to help administer the national legislation that implements the requirements of the directive. This should also provide guidance on good practices with regard to inspection activity (e.g. risk based inspection). Any such guidance in this area should be non-binding. (Also see Section 6.1.2.2, 6.1.3.1 and 6.2.2.1)
ii. To undertake their role, and to put in place activities which support **building a good safety culture and drive continuous improvement.** In addition it should explain the importance that they undertake activities that drive continuous improvement (following a plan-do-check-act (PDCA) cycle and therefore measuring and monitoring the safety performance of the industry). (Also see Sections 6.1.1.2, 6.1.1.4, 6.2.1.2, 6.1.3.1, 6.1.3.3 and 6.2.2.1)

The Senior Labour Inspectors Committee (SLIC) and the Offshore Oil and Gas Authorities Group (EU 2012) can potential play a key role in this regard.

c. Set-out the **information** that it is expected should be made available for a regulator to undertake their role. This should cover the lifecycle stages including; the design / build stage, drilling activities, production, etc. Likewise, Senior Labour Inspectors Committee (SLIC) and the Offshore Oil and Gas Authorities Group can potential play a key role in this regard. (Also See Sections 6.1.2.1 and 6.1.1.4.6)

d. Clearly **defines terms** e.g. “the employer”. (Also see Section 6.1.1.5).

e. Describe the **interfaces between the directive and other directives / legislation,** including the proposed legislation, and how these interfaces should be managed (particularly offshore). Note that guidance on how Directive 92/91/EEC and the proposed legislation for offshore oil and gas interface should also explain how they work together. (Also see Sections 6.1.3.2, 6.2.1.2 and 6.2.2.2).

f. Explain the process from risk identification through to gaining assurance that risks are being appropriately managed, (including the importance of identifying what is “critical” to managing safety). Guidance which explains the link from risk identification, to risk assessment, to identifying equipment, activities or competencies critical to maintaining the integrity of any facility engaged in mineral extraction through drilling activities (and defining their functionality), to inspection and verification activities would therefore assist stakeholders. This should all be in the context of a safety and health management system. This is achieved to some extent in the commission document “Guidance on risk assessment at work” (EC, 1996) developed in support of the framework directive (Directive 89/391/EEC).

g. Outline **good practice for workforce engagement.** Amongst other aspects, this should include guidance on good practices for the role and responsibilities of safety representatives. The goals to be achieved in this regard are outlined in Articles 10 and 11 of Directive 89/391/EEC. (Also see Section 6.1.3.3).

Other EU directives (e.g. Directive 2002/49/EC on environmental noise amongst others) include provisions that encourage the commission to develop guidelines (in certain areas) that help to aid the achievement of legislative goals; thus there is precedent for doing so in the context of the directive. It is recognised that this approach is more common in the sectorial based directives as opposed to those under the EU’s health and safety at work framework.

**R14.** The Commission should consult internally with those responsible for protecting the general public to determine if there should be guidance on the appropriateness of countries extending the scope of their national legislation to cover the general public. This should consider not only the well site, but also the associated facilities covered under the directive. (Also see Section 6.1.1.3.1).
R15. The Commission should investigate what role it could take and how it can work with stakeholders to agree relevant **guidelines, practices and technical standards to be used across EU and EEA countries**. (Also see Section 6.1.1.2, 6.1.3.1 and 6.2.1.2). The Machinery Administrative Cooperation Group (AdCo) and the EU Machinery Directive Interest Group and EU Advisory Committee on Safety and Health standardisation could assist with this recommendation.

R16. The Commission should look to how it can support putting in place **engagement forums** for learning and a **continuous improvement loop** that supports the maintenance and improvement of supporting materials including:


b. Standards and guidelines.

Helping make sure they are updated promptly to reflect learning from experience and accidents. As states this should include developing **engagement forums** between the primary stakeholders (regulators, industry and unions) where learning (e.g. from accidents, inspections, etc.) is shared and used as input to the continuous improvement activities. Again that Senior Labour Inspectors Committee (SLIC) and the Offshore Oil and Gas Authorities Group could assist with this recommendation.

R17. The Commission should investigate what role it could take and how it can **support** EU and EEA country **regulators** in an early phase of implementing their national legislation for the requirements of Directive 92/91/EEC to help them to **build the capabilities** and experience they require to effectively regulate the industry. (Also see Section 6.1.1.2, 6.1.2.2 and 6.2.1.2).
8 REFERENCES


European Commission (EC), 2011, “Proposal for a service contract to analyse and evaluate the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling”. Invitation to tender No VT/2011/042 documents.


Maitland, G., December 2011 “Offshore Oil and Gas in the UK - an independent review of the regulatory regime”, Imperial College.


Staatstoezicht op de Mijnen, 2011, “Jaarverslag 2010”


9 ABREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AHWG</td>
<td>Ad Hoc Working Group</td>
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<tr>
<td>CER</td>
<td>Commission for Energy Regulation (Ireland)</td>
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<td>CO₂</td>
<td>Carbon dioxide</td>
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<td>DEA</td>
<td>Danish Energy Agency</td>
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<td>Directorate General</td>
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<td>HSA</td>
<td>Health and Safety Agency (Ireland)</td>
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<td>ISO</td>
<td>International Standards Organisation</td>
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<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<td>PED</td>
<td>Pressure Equipment Directive</td>
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<td>PDCA</td>
<td>Plan Do Check Act</td>
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<td>QMS</td>
<td>Quality Management System</td>
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<td>SME</td>
<td>Small Medium Enterprise</td>
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<td>SWP</td>
<td>Stand Working Party</td>
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<td>US (/ USA)</td>
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APPENDIX

I

QUESTIONS THE REVIEW AIMS TO ANSWER
I. QUESTIONS THE REVIEW AIMS TO ANSWER

I.1 Introduction to Appendix

This appendix presents the questions which were developed as a refinement of the review’s objectives (see Section 3.2 of the main report). They are the questions which the review aims to answer and, by doing so, meets its objectives.

The questions are extracted from the document agreed with the Commission and its Ad Hoc Steering Committee. Each question is numbered so as to allow cross referencing with the findings and discussion of the review (see Section 6 of the main report), and hence to its recommendations (see Section 7 of the main report).

I.2 Top Level Questions the Review Aims to Answer

The ultimate questions to be answered by the review were defined as:

1. What are the differences in the ways in which Directive 92/91/EEC has been implemented by the Member States?
2. How effective is offshore safety legislation in the 27 Member States?
3. What changes (if any) are required to Directive 92/91/EEC following the Deepwater Horizon accident? Otherwise, what is the justification if no changes are required?
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed European regulation on oil and gas?
5. What other options (e.g. guidelines) could be used to increase the effectiveness of the directives?

I.3 Lower Level (More Specific) Questions the Review Aims to Answer

As part of the review, many other lower level (more specific) questions are relevant. The following provides the preliminary question set developed to outlines a route towards answering the top level (ultimate) questions in a logical manner.

I.3.1 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in the 27 Member States and 3 EEA countries? This is to provide suitable context for the subsequent questions, not a detailed analysis.
7. What is the balance of activity between offshore and onshore industries in each country?
8. What is the balance of activity between undertakings and public-sector bodies in each country?
9. What has been the experience of fatalities and injuries in mineral extraction through drilling? This is to identify useful data sources in each country.
10. Which accidents provided the most significant lessons for safety in mineral extraction through drilling? This is to identify useful investigations in each country.
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling?
### I.3.2 Regulatory approaches in the Member States

| 12. | How have the Member States interpreted Directive 92/91/EEC? This is to provide a broad overview, not an exhaustive list. |
| 13. | What are the main differences in approach to offshore safety & health regulations adopted by individual Member States and EEA countries? |
| 14. | Have the Member States implemented Directive 92/91/EEC as part of a wider legislative framework or as isolated legislation? |
| 15. | What is the balance of regulatory attention between major hazard control measures and conventional occupational health and safety? |
| 16. | What is the balance of regulatory attention between goal-setting requirements and prescriptive regulations? |
| 17. | What is the balance of regulatory attention between safety & health management and hazard protection? |
| 18. | What consideration is given to safety culture or safety climate? |
| 19. | What are the differences in approach between undertakings and public-sector bodies? |
| 20. | What non-legislative guidance is available (if any)? To what extent is this used to help protect safety and health? |

### I.3.3 Scope

| 21. | How does national legislation address major accident hazards? For example, how does it provide protection against the events that occurred in Deepwater Horizon accident? |
| 22. | What parts of the drilling process does national legislation cover? For example, does it cover towing of drilling rigs? |
| 23. | What parts of the production process does national legislation cover? For example, does it cover stand-by vessels, construction of offshore installations etc.? |
| 24. | What other drilling-related activities does the national legislation cover? For example, does it cover shale gas drilling, shale oil production or gas sequestration? |
| 25. | Do you consider the directive covers other activities related to drilling operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)? |
| 26. | How does the national legislation define the “workplace”? For example, does it cover transportation of workers? |
| 27. | How does the national legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry? |
| 28. | How does the national legislation define “major” changes that are required to trigger revision of the safety and health document? How do stakeholders understand this criterion? |
| 29. | Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so how is this achieved? |
| 30. | Is the information presented in the safety health document subject to quality control (i.e. verified) by the regulator? If yes, how is this achieved? |
| 31. | Does the national legislation cover workers involved in rescue and recovery operations? |
| 32. | Does the national legislation include provisions for gender and disability issues? |
I.3.4 Enforcement

33. How are the requirements of Directive 92/91/EEC enforced within each member state?

34. How practical is enforcement of the requirements of different types of national legislation? What is the experience of enforcement by regulators?

35. Who is responsible for the safety of regulators/enforcement officers while offshore or during transport to offshore installations?

I.3.5 Effectiveness

36. What impact do the specific regulatory approaches have on safety and health protection?

37. What are the potential consequent differences in safety and health between the different countries?

38. What difficulties and positive effects have been encountered by undertakings and public-sector bodies in the practical application of the legislation on safety and health at work?

39. What if any negative or positive side effects (i.e. unplanned consequences) have resulted from the practical application of the legislation on safety and health at work?

40. To what extent have SMEs and self-employed workers been affected?

41. Are there any features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

I.3.6 Evaluation

42. Does Directive 92/91/EEC adequately protect the safety and health of workers in mineral extraction through drilling? For example, is it fit for purpose?

43. Does Directive 92/91/EEC adequately address major accident hazards in mineral extraction through drilling? If not, what changes are needed?

44. Does Directive 92/91/EEC adequately address scenarios that have occurred in notable accidents such as Deepwater Horizon? If not, what changes are needed?

45. Does Directive 92/91/EEC specify adequate minimum safety and health requirements? If not, what changes are needed?

46. Is the scope of Directive 92/91/EEC consistently interpreted among the Member States? If not, what changes are needed?

47. Are the specific articles of Directive 92/91/EEC consistently interpreted among the Member States? If not, what changes are needed?

48. Are there any other gaps in Directive 92/91/EEC? If so, what further changes are needed?

49. Does Directive 92/91/EEC ensure continuity and avoid overlap with the proposed European regulation on oil and gas? If not, what changes are needed?

50. What is the current administrative burden of Directive 92/91/EEC? Are any changes needed to minimise it?
I.3.7 Future regulatory approach

51. What is the optimum balance between regulations and directives for safety and health protection in mineral extraction through drilling?

52. How can the effectiveness of the directives be increased in Member States with both mature and immature mineral extraction industries?

53. What other options (e.g. guidelines) could be used to increase the effectiveness of the directives?

54. What would be the cumulative effect of the proposed changes on the effectiveness of Directive 92/91/EEC?

55. What would be the administrative burden of the proposed new legislation? Can existing systems cope with the extra requirements? How can the burden be minimised?
APPENDIX

II

GAP ANALYSIS OF KEY ACCIDENTS VERSUS THE PROVISIONS OF DIRECTIVE 92/91/EEC
II. GAP ANALYSIS OF KEY ACCIDENTS VERSUS THE PROVISIONS OF DIRECTIVE 92/91/EEC

II.1 Gap Analysis Summary

II.1.1 Background and Approach

As part of this review, to evaluate the adequacy of existing European Union (EU) legislation-Directive 92/91 of the European Economic Community (Directive 92/91/EEC) on health and safety in the extractive industries, a gap analysis of the directive versus past incidents has been conducted. The aim of the gap analysis was to identify those areas that are not addressed (fully or adequately) by the directive. This appendix outlines the details of the gap analysis approach together with its results.

Five major offshore accidents were used for the analysis. They consist of two blowouts (Deepwater Horizon and Montara), a collision-induced wellhead leak (Usumancita), a collision-induced riser fire (Mumbai High North), and a semi-submersible explosion and capsize (P-36). To identify gaps, causal factors and recommendations were identified from the available accident investigations, and compared with the provisions of the Directive 92/91/EEC.

II.1.2 Conclusions and Recommendations on the Requirements of the Directive

The directive includes goal-setting requirements to identify hazards and take adequate precautions, because of this it has to be concluded, at the top level, that the principles of the directive means that it covers all the causal factors of any accidents (including the five reviewed) which harm or had the potential to harm workers.

Furthermore, because the accidents involved specific scenarios, whereas the directive is necessarily worded in general terms so as to cover a full range of situations, it is concluded, at the top level, that its requirements cover all of the causal factors from the accidents. It is also concluded that it would not be appropriate to make these requirements more specific, because this would potentially fail to address many other accidents that might occur.

Nevertheless, many of the causal factors are not fully covered by the requirements of the directive. It is possible to add more specific requirements, to make the directive more comprehensive and useful in protecting against large groups of causal factors. Potential requirements / areas are detailed below. These indicate the type and general direction of improvements that could be made to the directive. For the most part, they aim to clarify and make explicit existing provisions. These are by no means exhaustive as they are based on a review of a limited set of accidents. No consideration is given to the manner in which this should be done in this appendix, as it is beyond the scope of this gap analysis.

Areas in which the directive could be enhanced with specific requirements:

1. A safety management system intended to promote operational excellence and a strong safety culture.

2. Safety-driven decision-making to ensure an appropriate balance between time, money and safety.

3. Project risk management to manage business risks that may impact on worker safety.
4. Identification and analysis of safety-critical tasks, so as to identify tasks that have a critical impact on safety (such as cement testing and negative-pressure testing) and ensure that appropriate precautions are developed for them, such as procedures or competence requirements.

5. Compliance with safety-critical operating procedures.

6. Communication of safety-critical information between stakeholders, to ensure that companies exchange information that is necessary to ensure safety and health.

7. Communication of lessons from incidents (i.e. near-misses and accidents).

8. Inform workers about their potential contribution to hazards identified in the safety and health document.

9. Adequate well design to maintain safety margins.

10. Well control procedures covering normal operations and emergency response; including risk assessment, influx monitoring and blowout preventer (BOP) operation.

11. Adequate weather forecasts for operations sensitive to adverse weather.

12. Operating procedures taking account of adverse weather.

13. Specific design criteria and operating limits in adverse weather.


15. Joint procedures for vessel-platform interface operations.

16. Independently confirm or verify that the provisions of directive have been met with particular regard to the adequacy of risk assessments, procedures, etc.

The basis for these conclusions can be found under in Section II.8 of this appendix.

II.1.3 Conclusions and Recommendations – Overall Legislative Approach
Some of the recommendations from the accident investigations relate to broader questions of legislation for safety and health, and so are relevant to the present study. The following key conclusions are drawn on this subject.

17. The regulatory system should ideally combine a goal-based approach with prescriptive minimum standards in key areas.

18. Non-mandatory guidance should be issued to support industry in key areas where more clarity is needed as to the legislative intent.

19. Regulators should identify and enforce safety-critical points in key areas that warrant explicit review and approval before operations can proceed.

The basis for these conclusions can be found in Section II.8.
II.2 Introduction to Appendix

II.2.1 Background
The overall review to evaluate the adequacy of existing EU legislation (Directive 92/91/EEC) on health and safety in the extractive industries was broken down into a series of tasks. One of these tasks was to undertake a “gap analysis” of the directive versus major accidents that is aimed at identifying those areas that are not addressed (fully or adequately) by the directive.

Major accidents are events that result in significant adverse consequences for all those involved, particularly where lives have been lost. It is evident that no one wants these events to happen. It is clearer still that no one willfully makes them happen; nevertheless, they occur.

Understanding how these events occur is key to preventing their reoccurrence. This gap analysis is aimed at drawing upon the insights of accidents (the identified causal factors) to assess how the directive helps to prevent them from a legislative point of view. As a consequence it draws heavily upon the body of literature available in the public domain related to a selected number of major accidents.

The sole focus of this work is on “major accidents” (i.e. those involving actual or potential loss of multiple lives, and potentially involving significant socio-economic impacts / environmental damage). Given the recent high profile accidents that have occurred in the offshore oil and gas sector, particular emphasis has been placed on accidents in this sector.

II.2.2 Objectives
The objectives of this task (as outlined in the plan of work for the project) are to:

- Undertake a gap analysis against the directive to identify the root causes of the accident and how to manage those root causes (i.e. recommendations) which:
  - The directive does not cover (i.e. a gap).
  - The directive does not cover adequately (i.e. a partial gap or a weak requirement).
  - (For accidents in European waters, the directive does cover adequately, however the requirement has not been fully implemented).

The key goal of this gap analysis is to identify the areas where potential improvements can be made; no consideration is given to the manner in which this should be done as it is beyond the scope of this gap analysis. This aspect is considered within the other tasks undertaken as part of this review.

II.2.3 Accident Selection
An initial long-list of global offshore accidents was identified and shared with the project team as a basis for this study (see Table II.1). In developing the long list the primary aim was to highlight the accidents with the significant loss potential (defined here as loss of life / asset damage / environmental damage). Emphasis was laid on accidents directly relating to the facility whilst in operation (for e.g. blowouts, loss of hydrocarbon containment, structural failure, etc.). Hence related incidents, such as transport incidents (helicopter crashes) and capsizes during towing, though significant, are not listed here.
The primary data sources consulted are:

4. Oil Rig Disaster “Rig Incident List” (online resource).

Full references for the above are given in Section II.10.

Table II.1 Long list of Global Offshore Incidents (post-1977)

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Incident Descriptor (Field location/name of facility)</th>
<th>High-level Incident summary (Cause/consequences)</th>
<th>Year (of occurrence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Norway*</td>
<td>Ekofisk</td>
<td>Blowout; all personnel were successfully evacuated. No fatalities occurred.</td>
<td>1977</td>
</tr>
<tr>
<td>2</td>
<td>Mexico</td>
<td>Ixtoc</td>
<td>Blowout; No fatalities, 71 evacuees; oil flowed for 9 months.</td>
<td>1979</td>
</tr>
<tr>
<td>3</td>
<td>China</td>
<td>Bohai II</td>
<td>Structural failure and capsize; 72 killed.</td>
<td>1979</td>
</tr>
<tr>
<td>4</td>
<td>Norway*</td>
<td>Alexander Kielland</td>
<td>Structural failure and capsize; 123 killed.</td>
<td>1980</td>
</tr>
<tr>
<td>5</td>
<td>Canada</td>
<td>Ocean Ranger</td>
<td>Loss of buoyancy; 84 killed.</td>
<td>1982</td>
</tr>
<tr>
<td>6</td>
<td>China</td>
<td>Glomar Java Sea</td>
<td>Overwhelmed in storm; 81 killed.</td>
<td>1983</td>
</tr>
<tr>
<td>7</td>
<td>Brazil</td>
<td>Enchova</td>
<td>Well blowout 1984; 42 killed.</td>
<td>1984</td>
</tr>
<tr>
<td>8</td>
<td>UK</td>
<td>Piper Alpha</td>
<td>Hydrocarbon leak leading to explosion and fires; 167 killed.</td>
<td>1988</td>
</tr>
<tr>
<td>9</td>
<td>UK</td>
<td>Ocean Odyssey</td>
<td>Blowout; no fatalities</td>
<td>1988</td>
</tr>
<tr>
<td>10</td>
<td>Thailand</td>
<td>Sea Crest</td>
<td>Lost in storm; 84-91 killed.</td>
<td>1989</td>
</tr>
<tr>
<td>11</td>
<td>Norway</td>
<td>Sleipner A</td>
<td>Structural failure.</td>
<td>1991</td>
</tr>
<tr>
<td>12</td>
<td>USA</td>
<td>Timballier Bay</td>
<td>Blowout.</td>
<td>1992</td>
</tr>
<tr>
<td>13</td>
<td>Brazil</td>
<td>P.36</td>
<td>Explosions in process system; 11 killed.</td>
<td>2001</td>
</tr>
<tr>
<td>14</td>
<td>Egypt</td>
<td>GSF Adriatic IV Jack - Up</td>
<td>Blowout; no fatalities</td>
<td>2004</td>
</tr>
<tr>
<td>15</td>
<td>India</td>
<td>Mumbai High North</td>
<td>Fractured export riser due to ship collision in inclement weather resulting in extensive fires; 22 killed.</td>
<td>2005</td>
</tr>
<tr>
<td>16</td>
<td>Mexico</td>
<td>Usumacinta</td>
<td>Gas leak then blowout of production wells; 22 killed.</td>
<td>2007</td>
</tr>
<tr>
<td>17</td>
<td>Australia</td>
<td>Montara</td>
<td>Blowout; no fatalities.</td>
<td>2009</td>
</tr>
<tr>
<td>18</td>
<td>USA</td>
<td>Deepwater Horizon</td>
<td>Blowout and fires/explosions; 11 killed.</td>
<td>2010</td>
</tr>
<tr>
<td>19</td>
<td>Russia</td>
<td>Kolskaya</td>
<td>Capsize in storm. 14 of the 67 crew onboard were rescued.</td>
<td>2011</td>
</tr>
</tbody>
</table>

Note: EU and EEA countries are indicated with an asterisk (*)
An initial literature review indicated limited availability of good quality information (e.g. in the form of publically available accident reports) for most of these accidents. As a consequence, the long list was screened down to a short-list of five accidents with good information and used as basis for the gap analysis. In developing the short-list, only accidents that occurred after the directive came into force (i.e. since 1992) were selected as it is understood that the directive:

a) Was designed to address learning’s from accidents before this time (including Alexander Kjeilland in Norway and Piper Alpha in the United Kingdom).

b) Is widely known to represent the EU’s response to the Piper Alpha disaster.

The five short-listed accidents are:

1. Brazil P36, 2001; 11 fatalities.
2. India Mumbai High North, 2005; 22 fatalities.
4. Australia Montara, 2009; 0 fatalities.
5. USA Deep Water Horizon (DWH), 2010; 11 fatalities.

As can be readily observed none of the accidents selected occurred in EU countries. This is because there have not been major offshore accidents in EU waters within this period. Additionally, no accidents in onshore drilling (within the EU or elsewhere) are used because none have been identified. Finally, due to the lack of the lack of pertinent information in the public domain, near-misses have not been considered.

II.2.4 Approach

The gap analysis involves three steps as follows:

- Step 1: Identify the causal factors that played a central role in each accident drawing on information contained in publicly available sources (for example accident reports etc.)
- Step 2: Identify the recommendations that followed on from the accidents.
- Step 3: Compare both the causal factors and the recommendations against the requirements of the directive and identify any possible gaps.

There are clear differences between the focus of the directive and that of accident reports. The former is broad in scope (so as to cover a multiplicity of causes, events and outcomes), whilst the latter is naturally often quite narrow, focusing on the particulars / specifics of the accident. This divergence in focus creates challenges in the comparison. For this reason, the identified causal factors were interpreted to conform to a general theme. For example, a failure of safety valve would be taken as a failure in a safety system. This was necessary not only to allow for comparison versus the requirements of the directive, but also to ensure that the analysis can be conducted within a reasonable timeframe.
It is recognised that a limitation to the approach adopted is that it introduces an element of subjectivity as other generalisations could be developed for each casual factor identified. In that regard, it is important to note that any generalisations made are those judged to pertain to the primary area of concern (i.e. the most directly relevant).

II.3 Brazil P-36

II.3.1 Description
The P-36 semi-submersible production platform suffered an explosion on 15th March 2001 and subsequently capsized in the Rocador field offshore Brazil. It had Emergency Drainage Tanks (EDT) in the double walls of the port and starboard aft columns. The drainage pump of the starboard EDT had been removed for maintenance on 26th February and the tank’s outflow and atmospheric vent were blocked. At 22:21 on 14th March, an operator attempted to drain the port EDT but erroneously connected it to the production header instead of the production caisson, and then did not start the pump for an hour. This allowed hydrocarbons to flow from the production header through a leaking or partly open valve into the starboard EDT. When the port drainage pump was started, water also flowed into the starboard EDT, increasing the internal pressure until it ruptured at 00:22 on 15th March.

The EDT rupture damaged adjacent equipment, including a seawater cooling inlet pipe, which caused the column to flood, up to the level of ventilation shafts which allowed flooding of the pontoon beneath, producing a 2° list. Activators that should have sealed the ventilation dampers, failed. The rupture also released oil and gas that had accumulated inside the EDT. When the fire-fighting crew inspected the column, the gas migrated to upper levels, and ignited at 00:39, causing an explosion in the column, which killed 11 fire-fighters, and damaged equipment, doors and instrumentation.

Attempts to stabilise the unit were unsuccessful. Contingency plans and training for emergency ballast and control situations were inadequate. Two seawater pumps were inoperative awaiting repair. The inspection doors to Tank 26S and void space 61S were open, thus increasing the volume subject to flooding. The platform was evacuated, beginning with non-essential personnel between 01:44 and 04:20. Final abandonment by helicopter was at 06:03 when the platform had a 6° list.

Chain lockers and buoyancy tank vent tubes reached sea level allowing progressive flooding from 08:15. Intervention using nitrogen injection was unsuccessful. The platform eventually sank at 11:40 on 20th March.

II.3.2 Causal Factors and Key Recommendations
The following is a summary of the key causal factors and recommendations as outlined in the official accident report (Inquiry Commission P36 Accident, 2001).

Causal and Contributory Factors

1. The unexpected flow of hydrocarbons into the starboard EDT ultimately resulting in excessive pressure and rupture of the EDT.

2. Alignment of the port EDT to the production header instead of to the Production Caisson, thus permitting the entry of hydrocarbons into the starboard EDT.
3. Delay in activation of the drainage pump of the port EDT, allowing a reverse flow of hydrocarbons for approximately an hour.

4. Failure of the activators to close the sealed ventilation dampers permitting leakage through to the sealed habitable compartments of the column and pontoon.

5. Opening of the 26S tank and the 61S void space for inspection without following the procedure which established contingency measures, thereby increasing the volume subject to flooding.

6. Existence of two seawater pumps out of action for repair without contingency measures for substitution, reducing the scope to act in case of emergencies.

7. Deficient procedures and training to deal with emergency situations for controlling stability and ballast.

Main Recommendations

R1 To require the E&P analyse the complete range of the problems cited and implement an Operational Excellence Program in the Marine Production Units.

R2 In spite of being an oil industry practice, the Commission recommends that in future projects a management decision be taken not to use tanks or receptacles in columns or pontoons which are linked to processing activities. For those existing units with receptacles or tanks located in columns or pontoons and linked to processing activities, we recommend that the E&P carries out a reanalysis of its projects as to operational risk.

The commission also identified several other areas for improvement that were not directly linked to the accident, but would be implemented through the Operational Excellence Program for marine production units (a program designed to improve excellence in key operational areas). These included aspects such as the need for improved clarification of the roles and responsibilities of the persons in charge of different areas of the platform; a need to review supervisors’ functions to reduce their bureaucratic activities and to concentrate their focus on operating activities such as: operations in progress; non-routine adjustments etc. (to name a few). These were not considered further as they pertain to detailed operational issues (which are beyond the scope of the directive).

II.3.3 Comparison with the Directive

Table II.2 compares the key causal factors with the provisions of the directive, and comments on the extent to which they are addressed by the directive, in order to identify gaps or weak requirements that could usefully be improved. Table II.3 makes the same comparison with the recommendations following the accident.

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91? Yes/No and Relevant Section</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The unexpected flow of hydrocarbons into the starboard EDT ultimately resulting in excessive pressure and rupture of the EDT.</td>
<td>Unexpected hazard</td>
<td>Yes. Part C Item 1.1(a) requires the safety and health document to “identify the special sources of hazard associated with the workplace”.</td>
<td>Adequately covered. It would be inappropriate to provide a more specific requirement for this very particular hazard in the directive.</td>
</tr>
</tbody>
</table>
## MANAGING RISK

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.</td>
<td>Alignment of the port EDT to the production header instead of to the Production Caisson, thus permitting the entry of hydrocarbons into the starboard EDT.</td>
<td>Lack of hazard awareness</td>
<td>Yes.</td>
<td>Not fully covered. There is no explicit requirement for workers to be informed about their potential contribution to hazards identified in the safety and health document.</td>
</tr>
<tr>
<td>3.</td>
<td>Delay in activation of the drainage pump of the port EDT, allowing a reverse flow of hydrocarbons for approximately an hour.</td>
<td>Operator inexperience</td>
<td>Yes.</td>
<td>Adequately covered.</td>
</tr>
<tr>
<td>4.</td>
<td>Failure of the activators to close the sealed ventilation dampers permitting leakage through to the sealed habitable compartments of the column and pontoon.</td>
<td>Failure of safety systems</td>
<td>Yes.</td>
<td>Not fully covered. There is no requirement to confirm or verify that the requirement is met internally (say by the regulator or an independent 3rd party). This applies to all the requirements, although it was not critical in this accident.</td>
</tr>
<tr>
<td>5.</td>
<td>Opening of the 26S tank and the 61S void space for inspection without following the procedure which established contingency measures, thereby increasing the volume subject to flooding.</td>
<td>Failure to follow emergency procedures Inadequate procedures (See causal factor 7 below)</td>
<td>Yes.</td>
<td>Adequately covered.</td>
</tr>
<tr>
<td>6.</td>
<td>Existence of two seawater pumps out of action for repair without contingency measures for substitution, reducing the scope to act in case of emergencies.</td>
<td>Failure of safety systems</td>
<td>Yes.</td>
<td>Adequately covered. There is no explicit requirement for contingency measures during maintenance. However, the implicit requirement is clear.</td>
</tr>
</tbody>
</table>
Causal factor | Description | Generalised as… | Is it addressed by Directive 92/91? Yes/No and Relevant Section | To what extent?
--- | --- | --- | --- | ---
7. | Deficient procedures and training to deal with emergency situations for controlling stability and ballast | Inadequate emergency procedures and training | Yes, in principle. Part C Item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to …. limit the spread of accidents and allow controlled evacuation of the workplace in emergency situations”. | Not fully covered. Although emergency training is covered (see causal factor 5 above), there is no explicit requirement to develop adequate emergency procedures to maintain the integrity and stability of an offshore facility.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91? Yes/No and Relevant Section</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1.</td>
<td>To require the E&amp;P analyse the complete range of the problems cited and implement an Operational Excellence Program in the Marine Production Units</td>
<td>Safety management</td>
<td>Yes, in principle. Part C Item 1.1(d) requires the safety and health document to “show that the management system is adequate to comply with the provisions of directive 89/391/EEC and this directive”.</td>
</tr>
<tr>
<td>R2.</td>
<td>Not to use tanks or receptacles in columns or pontoons which are linked to processing activities.</td>
<td>Process design</td>
<td>Yes. Part C Item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”.</td>
</tr>
</tbody>
</table>

### II.4 India Mumbai High North

#### II.4.1 Description

The Mumbai High North (MHN) production platform suffered a fire on 27th July 2005 in the Mumbai High field offshore India. MHN was a processing platform built in 1981, part of a bridge-linked complex of 4 platforms. On board a multi-purpose support vessel (MSV), Samundra Suraksha, supporting saturation diving operations elsewhere in the field, a cook suffered an occupational accident, cutting off the tips of two fingers.
Medical evacuation was requested. Due to monsoon conditions, the in-field helicopter could not land on the MSV, so the MSV came alongside MHN to make a basket transfer. The leeward crane on MHN was not working, so the crane on the windward side was used. Conditions were wind 35 knots, swell 5m, current 3 knots. The MSV experienced problems with its dynamic positioning thrusters, and the master decided to use emergency mode, which by-passed the controls and operated each thruster directly. The MSV approached and the casualty was lifted off the deck by the MHN crane. However, wave motion caused the MSV’s helideck to strike the risers on MHN, causing a leak in the export gas lift riser. This immediately ignited, engulfing almost all of MHN and the adjacent accommodation platform MHF.

There were 384 people on the platform complex and MSV. Only 2 out of 8 lifeboats on the complex could be launched and only 1 out of 10 life rafts. Monsoon conditions prevented any helicopter assistance from ashore. 15 offshore supply vessels (OSVs) and MSVs rescued 362 people over 15 hours. 22 people died. 6 divers in a saturation chamber on the MSV were rescued 36 hours later. The MSV sank after 4 days.

II.4.2 Causal Factors
The investigation report has not been published; the following is a summary of the key causal factors identified by Verma (2011).

Causal and Contributory Factors

1. Adverse weather conditions, weather-side approach.
2. Absence of joint procedures for vessel-platform interface operations.
3. Manoeuvring misjudgement or operating error with possible machinery failure.
4. Absence of interaction between an inexperienced Offshore Installation Manager (OIM) of MHN and over-confident master of MSV.
5. Operating alongside the platform with unprotected risers. Riser protection guards were in place just above sea level but these were only suitable for smaller OSVs and were not considered suitable for larger MSVs.

Main Recommendations
No clear recommendations were identified in the references consulted. However the UK HSE (HSE, date unknown) raises some issues to be considered further. These include the need for:

R1 Thorough risk assessment of the potential causes and consequences of riser damage.
R2 Development, implementation and maintenance of associated risk management measures.
R3 Adoption of collision avoidance and protection measures which at least meet current good practice as described in UKOOA.
R4 Management arrangements to ensure that the risk management measures are effective and observed in practise.
II.4.3 Comparison with the Directive

Table II.4 compares the key causal factors with the provisions of the directive, and comments on the extent to which they are addressed by the directive, in order to identify gaps or weak requirements that could usefully be improved. Table II.3 makes the same comparison with the recommendations following the accident.

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91? Yes/No and Relevant Section</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Adverse weather conditions, weather-side approach.</td>
<td>Inadequate procedures (adverse weather)</td>
<td>Yes.</td>
<td>Part C Item 6.1 states “workers must be trained in the appropriate actions to be taken in emergencies”.</td>
</tr>
<tr>
<td>2.</td>
<td>Absence of joint procedures for vessel-platform interface operations</td>
<td>Inadequate procedures (Simultaneous operations)</td>
<td>Yes.</td>
<td>Part C Item 6.1 states “workers must be trained in the appropriate actions to be taken in emergencies”.</td>
</tr>
<tr>
<td>3.</td>
<td>Manoeuvring misjudgement or operating error with possible machinery failure</td>
<td>Operating error</td>
<td>Yes.</td>
<td>Part A Item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
</tr>
<tr>
<td>4.</td>
<td>Absence of interaction between an inexperienced OIM of MHN and over-confident master of MSV</td>
<td>Inadequate procedures (interface between installations)</td>
<td>See Causal Factor 2.</td>
<td></td>
</tr>
</tbody>
</table>
5. Operating alongside the platform with unprotected risers. Riser protection guards were in place just above sea level but these were only suitable for smaller OSVs and were not considered suitable for larger MSVs.

Possible reasons include:
- Lack of adequate hazard identification / protection.
- No operating procedures.
- Operating procedures that were not adhered to.

Inadequate hazard identification / mitigation measures.

Yes in principle

Part C Item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”.

Adequately covered.

It would be inappropriate to provide a more specific requirement for this very particular hazard.

### Table II.5 Mumbai High North: Comparison of Recommendations Against the Directive

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>No.</td>
<td>Description</td>
<td>Yes/No and Relevant Section</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Inadequate design / risk assessment</td>
<td>Yes, in principle</td>
<td></td>
</tr>
<tr>
<td>Recommendation No.</td>
<td>Description</td>
<td>Generalised as...</td>
<td>Is it addressed by Directive 92/91? Yes/No and Relevant Section</td>
</tr>
<tr>
<td>------------------</td>
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<td>------------------------------------------------</td>
</tr>
<tr>
<td>R2.</td>
<td>Development, implementation and maintenance of associated risk management measures.</td>
<td>Inadequate safety management</td>
<td>Unclear. Item 1 of Part C of 92/91 sets out the duties of the duty holder to “ensure that the safety and health document shows that all relevant measures have been taken to protect the safety and health of workers in both normal and critical situations”. It further goes on to state that the document must “identify the special sources of hazard including any concomitant activity...” and that the necessary provisions are in place to manage / control such special sources of hazard.</td>
</tr>
<tr>
<td>R3.</td>
<td>Adoption of collision avoidance and protection measures which at least meet current good practice as described in UKOOA.</td>
<td>See R1 above.</td>
<td>See R1 above.</td>
</tr>
<tr>
<td>R4.</td>
<td>Management arrangements to ensure that the risk management measures are effective and observed in practise.</td>
<td>Inadequate safety management</td>
<td>See R2 above.</td>
</tr>
</tbody>
</table>

II.5 Mexico Usumancita

II.5.1 Description
The Usumancita jack-up rig was evacuated on 23rd October 2007 in the Kab field offshore Mexico. The rig was positioned over the KAB-101 platform preparing to drill a well. A storm equivalent to a Class 1 hurricane occurred. The weather forecasts gave insufficient warning to withdraw the rig. The weather combined with seabed instability due to previous interventions resulted in movement of the rig so that its cantilever struck the wellhead on the KAB-101 platform, causing a leak of oil and gas. Rig crew transferred to the platform to close its safety valves, but one sub-surface safety valve failed, allowing the leak to restart. It was decided to evacuate the rig because the well fluid contained hydrogen sulphide, a toxic gas. The crew boarded lifeboats which were lowered to the sea successfully and moved away from the platform. The stand-by tug was not equipped to recover personnel from the lifeboats in the weather conditions, and the lifeboats were intended to keep the occupants safe until the conditions improved. However, due to panic and loss of authority within the boats, the occupants opened the hatches, allowing water entry and loss of stability. 20 rig crew and 2 crew of the tug died in the recovery operation.
II.5.2 Causal Factors and Key Recommendations
The following is a summary of the key causal factors and recommendations as outlined in the official accident report (Comisión Especial Independiente, 2007).

Causal and Contributory Factors

1. Inaccuracy of available weather information coupled with a lack of timeliness was identified as the key reason that the danger the strong winds posed to the platform was not properly anticipated.
2. The platform displaced from its position.
3. The cantilever was deployed.
4. The failure of the sub-surface safety valve was also identified as a contributing factor to the duration of the ensuing fires. Had the leak been controlled, it would not have been necessary to evacuate the personnel from the rig.
5. Lifeboats were opened in the storm. The opening of the lifeboat hatches during the storm resulted in water ingress, loss of stability and ultimately loss of life.
6. In addition to the issues surrounding the proper use of the lifeboats, rescue efforts were severely hampered by the prevailing weather conditions. The emergency responders did not have suitable equipment to allow for an adequate response under the severe weather conditions.

Main Recommendations

R1 The available weather data should be improved to be of a quality sufficient enough to act as a basis for timely decision making.
R2 Measures to limit the potential for displacement and the risk of accidents in general should be taken with early indications of inclement weather.
R3 Determine what caused the subsea safety valve to fail and check the status of all similar valves currently in use.
R4 Review the protocols for the design, installation and use of such platforms to ensure they have the stability and solidity necessary to withstand the environmental loads they are subject to. This should also address the use of the cantilever so as to ensure its deployment does not impact on the stability.
R5 Improve the Evacuation, Escape and Rescue (EER) training / response of workers and in particular on the use of lifeboats in emergency situations.

II.5.3 Comparison with the Directive
Table II.6 compares the key causal factors with the provisions of the directive, and comments on the extent to which they are addressed by the directive. In this way gaps or weaknesses that could usefully be improved are identified. Table II.7 makes the same comparison with the recommendations following the accident.
### Table II.6 Usamancita: Comparison of Causal Factors Versus the Provisions of the Directive

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Inaccuracy of available weather information coupled with a lack of timeliness was identified as the key reason that the danger the strong winds posed to the platform was not properly anticipated.</td>
<td>Inadequate information</td>
<td>Yes, albeit in a general way. The directive includes a general requirement for proper design, operation and use of the workplace across various sections and articles. Adequate and timely information is needed to ensure proper operation and hence this requirement is considered to be addressed by the directive.</td>
<td>Not fully covered. The need for accurate and timely weather forecasts (particularly where severe weather poses a key threat to the facility e.g. in the North Sea) is not explicitly mentioned or addressed.</td>
</tr>
<tr>
<td>2.</td>
<td>The platform displaced from its position.</td>
<td>Inadequate design</td>
<td>Yes. The directive includes a general requirement for proper design of the workplace across various sections and articles. Item 1 of Part A addresses “Stability and Solidity” of the workplace with particular reference that they must “be designed, constructed, erected, operated, supervised and maintained to withstand the environmental forces anticipated”.</td>
<td>Not fully covered. The phrase “withstand the environmental forces anticipated” is quite vague. On a practical level, most designs are not built to withstand the most onerous environmental load but a more likely and practicable design basis such as a 1-in-10,000 year event. It might be prudent to qualify what is meant by anticipated environmental forces.</td>
</tr>
<tr>
<td>3.</td>
<td>The cantilever was deployed</td>
<td>Lack of hazard awareness</td>
<td>Yes Item 1.1a states that the risk assessment must identify “special sources of hazard associated with the workplace”.</td>
<td>Adequately covered.</td>
</tr>
</tbody>
</table>

Item 1.1a states that the risk assessment must identify “special sources of hazard associated with the workplace”.
### Causal Factor

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as...</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Inadequate safety management</td>
<td>Unclear.</td>
<td>Item 1 of Part C of 92/91 sets out the duties of the duty holder to “ensure that the safety and health document shows that all relevant measures have been taken to protect the safety and health of workers in both normal and critical situations”. It further goes on to state that the document must “identify the special sources of hazard including any concomitant activity…” and that the necessary provisions are in place to manage / control such special sources of hazard.</td>
<td>Not fully covered. This can be construed to imply a requirement for a safety management system (SMS) and Part D of Item 1.1 makes specific reference to a safety management system (SMS). However, in no other section does 92/91 outline a specific requirement for a SMS. Note that such a requirement (i.e. for a SMS) is allowed for in 96/82/EC (the SEVESO II Directive) and the Railway Safety Directive (2002/49/EC).</td>
</tr>
<tr>
<td>4.</td>
<td>The failure of the sub-surface safety valve was also identified as a contributing factor to the duration of the ensuing fires.</td>
<td>Failure of safety systems</td>
<td>Yes</td>
<td>Adequately covered.</td>
</tr>
<tr>
<td>Causal factor</td>
<td>Description</td>
<td>Generalised as…</td>
<td>Is it addressed by Directive 92/91?</td>
<td>To what extent?</td>
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</tr>
<tr>
<td>5.</td>
<td>Lifeboats were opened in the storm.</td>
<td>Inadequate emergency training / practice</td>
<td>Yes, albeit in a general way. Item 6 of Part C of 92/91 includes provisions for adequate training for personnel in emergency situations. In this accident, personnel opened the hatches and this was a precursor event that led the fatalities. This suggests that the issue here was more “procedural” (in failing to comply with instructions) rather than inadequate training. However, it is difficult to separate both elements as proper training is expected to result in the compliance with procedures.</td>
<td>Not fully covered. “Emergencies” is a broad ranging term that covers a wide range of events. Those that occur during severe weather conditions require special mention as they present particular challenges. Additionally, the training requirements do not include considerations for activities under severe weather conditions highlighting a specific emphasis on the need for personnel to follow procedures. Finally, there are no requirements to test the adequacy of the training requirements (say via emergency exercises or drills).</td>
</tr>
<tr>
<td>6.</td>
<td>In addition to the issues surrounding the proper use of the lifeboats, rescue efforts were severely hampered by the prevailing weather conditions. The emergency responders did not have suitable equipment to allow for an adequate response under the severe weather conditions.</td>
<td>Inadequate emergency planning</td>
<td>Yes, albeit in a general way. Furthermore, it states that Standby Vessel’s (SBV’s) “must be designed and equipped to meet evacuation and rescue requirements”. It is recognised that recovery operations during severe weather are difficult and that achieving the above will be challenging.</td>
<td>Not fully covered. As for the above. Evacuation and rescue activities in severe weather pose specific challenges that require special mention. No specific mention on the need for SBV’s to be designed / equipped to meet evacuation and rescue requirements in all weather conditions (especially severe weather) is given.</td>
</tr>
</tbody>
</table>
### Table II.7 Comparison of Recommendations Versus the Provisions of the Directive

<table>
<thead>
<tr>
<th>No.</th>
<th>Recommendation Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91? Yes/No and Relevant Section</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>R1</td>
<td>The available weather data should be improved to be of a quality sufficient enough to act as a basis for decision making.</td>
<td>Improve the accuracy and quality of weather data</td>
<td>Yes, albeit in a general way. See text in Causal Factor 1 in Table II.6.</td>
<td>Not fully covered. The clarity of the directive would be significantly enhanced if specific reference was made to severe weather, recognising that it is a “known” hazard.</td>
</tr>
<tr>
<td>R2</td>
<td>Measures to limit the potential for displacement and the risk of accidents in general should be taken with early indications of inclement weather.</td>
<td>Improve operational procedures</td>
<td>Unclear. Detailed operational requirements are beyond the focus of the directive, although such issues are typically addressed via the use of a safety management system.</td>
<td>Not fully covered. As highlighted in Causal factor 3 in Table II.6. The directive does not include an explicit requirement for a SMS (although it makes reference to one). In this regard, it is difficult to see how it can be improved.</td>
</tr>
<tr>
<td>R3</td>
<td>Determine what caused the subsea safety valve to fail and check the status of all similar valves currently in use</td>
<td>Confirm and ensure that safety systems will work as intended and with a high level of reliability when called upon.</td>
<td>Yes, albeit in a general way. The directive does not include provisions to confirm the safety systems are in good working order. See text in Causal Factor 4 in Table II.6.</td>
<td>Not fully covered. Though provided for in the directive, there is no requirement to confirm (say by a 3rd party) that the available safety systems will work as intended. Such a requirement will enhance the utility of the directive and its ability to prevent accidents.</td>
</tr>
<tr>
<td>R4</td>
<td>Review the protocols for the installation and use of such platforms to ensure they have the stability and solidity necessary to withstand the environmental loads they are subject to. This should also address the use of the cantilever so as to ensure its deployment does not impact on the stability.</td>
<td>Improve and confirm the adequacy of operational procedures</td>
<td>Unclear. See comment in R2 above.</td>
<td>Not fully covered. As highlighted in Causal factor 3 in Table II.6. The directive does not include an explicit requirement for a SMS (although it makes reference to one). In this regard, it is difficult to see how it can be improved.</td>
</tr>
<tr>
<td>R5</td>
<td>Improve the EER training / response of workers and in particular on the use of lifeboats in emergency situations.</td>
<td>Improve the EER training / response in severe weather situations</td>
<td>Yes, albeit in a general way.</td>
<td>Not fully covered. The directive does not make specific reference to EER activities in severe weather.</td>
</tr>
</tbody>
</table>
II.6 Australia Montara

II.6.1 Description

The Montara wellhead platform (WHP) suffered a blowout on 21st August 2009 in the Timor Sea offshore Australia. The water depth was 77m. Following drilling operations by the jack-up rig West Atlas in March 2009, the H1 well was suspended with the foot of the 25cm (approx.) casing in the reservoir, with an approved plan to install pressure-containing anti-corrosion caps (PCCC) on the 25cm (approx.) and 34cm (approx.) casing. The installation of a cemented shoe in the 25cm (approx.) casing was defective. Displacement fluid was inappropriately pumped beneath the float collar, which resulted in over-displacement of the cement from the casing shoe track and the annulus, so that the cemented shoe lacked integrity as a primary well barrier. The operator failed to test the casing shoe after it had set, which would probably have detected the inadequacy. A secondary barrier, the PCCC, was not installed on the 34cm (approx.) casing contrary to normal practice, but it was incorrectly reported as being installed.

In August 2009, the West Atlas drilling rig returned to the platform to tie back the casing strings to the platform. On 20 August 2009 the 25cm (approx.) PCCC was removed, as the operators incorrectly believed the fluid in the casing string was overbalanced to pore pressure and would act as a barrier. While the rig was working on another well, the defective cemented shoe allowed hydrocarbons to enter the 25cm (approx.) casing, causing a blowout on the WHP.

All 69 people were evacuated from the rig and WHP. Oil and gas continued to flow for 10 weeks until the well was killed by relief drilling operations. The release was 250 km off the Australian coast, and no oil came ashore.

II.6.2 Causal Factors and Key Recommendations

The Commission of Inquiry (Borthwick, 2010) identified the cause of the blowout as the fact that the well control barriers did not comply with the operator - Petroleum Authority of Thailand Exploration and Production Public Company Limited Australia (PTTEPAA’s) own well construction standards or with sensible oilfield practice. The following is a summary of the key causes, causal factors and recommendations as outlined in this report (Borthwick, 2010).

Causal and Contributory Factors

Specific causes included:

1. The 25cm (approx.) cemented casing shoe had not been pressure tested in accordance with the company’s Well Construction Standards, despite major problems having been experienced with the cementing job.

2. While two secondary well control barriers chosen by PTTEPAA – pressure containing anti-corrosion caps (PCCCs) – were programmed for installation, only one was ever installed. Further, the PCCC that was installed (25cm (approx.) PCCC) was not tested and verified in situ as required by the Well Construction Standards.

3. PTTEPAA’s use of PCCCs as secondary well control barriers did not constitute sensible oilfield practice, especially in light of the suspension and drilling programmes in which they were used.
4. Key personnel working for PTTEPAA, both on the rig and onshore, were under the mistaken impression that the fluid left in the casing string was overbalanced to pore pressure and would therefore act as an additional barrier (even though the fluid was not monitored and overbalanced significantly to pore pressure as required by the well construction standards in order to be regarded as a proper barrier).

The Inquiry also identified the following systemic and interrelated factors that indirectly contributed to the accident.

5. PTTEPAA’s Well Operations Management Plan (WOMP) for the H1 Well and Well Construction Standards (which form part of the WOMP) were themselves inadequate. For example, they did not adequately set out how PTTEPAA would address risks affecting well integrity that arose during drilling, suspension and re-entry of the Montara wells.

6. Senior PTTEPAA personnel had only limited experience of batch drilling and batch tieback operations and did not fully comprehend the implications of such operations.

7. A number of aspects of PTTEPAA’s Well Construction Standards were at best ambiguous and open to different interpretations.

8. The company’s personnel on the rig demonstrated a manifestly inadequate understanding of PTTEPAA’s Well Construction Standards and knowledge of what they required.

9. PTTEPAA’s senior personnel on the rig and onshore were also deficient in their decision-making and judgments in relation to a number of important matters. The magnitude of this failure reflected a failure of judgment and competence.

10. PTTEPAA’s records and communication management were defective, particularly the exchange of information between rig and shore, between night and day shifts, between offline and online operations and in relation to milestones such as the installation of secondary barriers.

11. There was a systemic failure of communication between PTTEPAA and Atlas personnel, particularly with the Offshore Installation Manager (the OIM) and between rig and onshore personnel of both companies.

12. There were clearly ineffective exchanges of information between the two parties, with Atlas rig personnel either oblivious to key (or flawed) decisions being taken by PTTEPAA personnel or going along with them (particularly on matters pertaining to well integrity).

13. There was insufficient attention paid to putting in place mechanisms to assess and manage project risks, the competence of key personnel, the adequacy of WOMPs, and the interaction with contractors.

14. The prevailing philosophy revealed by PTTEPAA’s actions appears to have been to get the job done without delay. The evidence before the Inquiry repeatedly showed that risks were not recognised when they should have been, and not assessed properly when recognised.

15. The manifest failures within PTTEPAA extended to the interactions that the company had with the regulator, the Northern Territory Department of Resources (NT DoR) which, in the Inquiry’s view, had become far too comfortable.
Main Recommendations

**R1** The Inquiry supports the objective (rather than prescriptive) approach to regulation now followed in Australia. However, the pendulum has swung too far away from prescriptive standards. In some areas relating to well integrity there needs to be minimum standards.

**R2** The recommendations of the Inquiry in relation to suitable ways of achieving well integrity be included in a guidance manual that is issued for the assistance of industry and regulators.

II.6.3 Comparison with the Directive

Table II.8 compares the key causal factors with the provisions of the directive, and comments on the extent to which they are addressed by the directive, in order to identify gaps or weak requirements that could usefully be improved.

For this accident, a comparison of the various recommendations made versus the directive has not been undertaken as they relate to wider issues not directly pertaining to matters governed by the directive, but rather how legislation is designed, developed and administered. These recommendations are analysed in section II.8.3.

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The __ cm (9⅝ inch) cemented casing shoe had not been pressure tested in accordance with the company’s Well Construction Standards, despite major problems having been experienced with the cementing job.</td>
<td>Failure to follow procedures</td>
<td>Yes in principle. Part C Item 1.2 states “The employer shall observe the procedures and arrangements laid down in the safety and health document”. This interpretation takes the view that the well construction standards would have been included in the safety and health document.</td>
<td>Not fully covered. There is no explicit requirement to ensure compliance with safety-critical operating procedures. For example, a requirement to verify (independently or via a 3rd party) that well procedures have been strictly followed.</td>
</tr>
<tr>
<td>2.</td>
<td>While two secondary well control barriers chosen by PTTEPAA were programmed for installation, only one was ever installed. Further, the PCCC that was installed (the __ cm (9⅝ inch) PCCC) was not tested and verified in situ as required by the Well Construction Standards.</td>
<td>Failure to follow procedures</td>
<td>See Causal Factor 1.</td>
<td></td>
</tr>
<tr>
<td>Causal factor</td>
<td>Description</td>
<td>Generalised as...</td>
<td>Is it addressed by Directive 92/91?</td>
<td>To what extent?</td>
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</tr>
<tr>
<td>3.</td>
<td>PTTEPAA’s use of PCCCs as secondary well control barriers did not constitute</td>
<td>Inadequate</td>
<td>Yes in principle.</td>
<td>Not fully covered.</td>
</tr>
<tr>
<td></td>
<td>sensible oilfield practice, especially in light of the suspension and</td>
<td>well design</td>
<td>Part A Item 5 states “suitable well</td>
<td>There is no explicit requirement relating to the need to confirm the adequacy</td>
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<tr>
<td></td>
<td>drilling programmes in which they were used.</td>
<td></td>
<td>control equipment must be provided</td>
<td>and suitability (via an independent party, internal or 3rd party) of well design</td>
</tr>
<tr>
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<td></td>
<td>during borehole operations to</td>
<td>and procedures.</td>
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<td></td>
<td>protect against blowouts”.</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Key personnel working for PTTEPAA, both on the rig and onshore, were under</td>
<td>Inadequate</td>
<td>Yes.</td>
<td>Adequately covered.</td>
</tr>
<tr>
<td></td>
<td>the mistaken impression that the fluid left in the casing string was</td>
<td>hazard awareness</td>
<td>Part A Item 2.5 states “workers</td>
<td>It would be impracticable to provide more specific requirements against this</td>
</tr>
<tr>
<td></td>
<td>overbalanced to pore pressure and would therefore act as an additional</td>
<td></td>
<td>must be given the necessary</td>
<td>type of error.</td>
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<td></td>
<td>barrier.</td>
<td></td>
<td>information, instructions, training</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>and retraining to ensure their</td>
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<td>health and safety”.</td>
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<td></td>
<td>Hazard awareness amongst</td>
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<td></td>
<td>personnel is central to achieving</td>
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<td></td>
<td>risk management goals. A safety</td>
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<td></td>
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<td>culture (loosely defined to mean a</td>
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<td></td>
<td></td>
<td></td>
<td>collective awareness of danger</td>
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<td>coupled with the processes and</td>
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<td></td>
<td>mind set to avert such dangers)</td>
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<td>within an organisation (or across</td>
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<td></td>
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<td></td>
<td>organisations) is widely</td>
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<td></td>
<td>considered to be an effective way</td>
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<td></td>
<td></td>
<td></td>
<td>of ensuring high levels of hazard</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>awareness amongst personnel.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Construction Standards were themselves inadequate. For example, they did</td>
<td>well control</td>
<td>Part C Item 1.1 requires the safety</td>
<td>There is no explicit requirement to address risks during well operations.</td>
</tr>
<tr>
<td></td>
<td>not adequately set out how PTTEPAA would address risks affecting well</td>
<td>procedures</td>
<td>and health document to “identify</td>
<td>Furthermore, the directive does not include requirements to confirm the adequacy</td>
</tr>
<tr>
<td></td>
<td>integrity that arose during drilling, suspension and re-entry of the</td>
<td></td>
<td>the special sources of hazard</td>
<td>and suitability (via internal or external means) of risk management procedures,</td>
</tr>
<tr>
<td></td>
<td>Montara wells.</td>
<td></td>
<td>associated with the workplace” and</td>
<td>particularly those related to well control procedures.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>“show that adequate precautions</td>
<td></td>
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<td></td>
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<td></td>
<td>have been taken to avoid the</td>
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<td>accidents”.</td>
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</tbody>
</table>

DNT E NORSKE VERITAS
Report for European Commission
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling
<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91? Yes/No and Relevant Section</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Senior PTTEPAA personnel had only limited experience of batch drilling and batch tieback operations and did not fully comprehend the implications of such operations.</td>
<td>Inadequate management competence</td>
<td>Yes in principle. Part A Item 2.2 states “a responsible person who has the skills and competence required for this duty … must at all time be in charge of every workplace when workers are present”.</td>
<td>Not fully covered. There is no explicit requirement to confirm (via internal or external mechanisms) that this is indeed the case i.e. that the person in charge is confirmed have the requisite skills / competence.</td>
</tr>
<tr>
<td>7</td>
<td>A number of aspects of PTTEPAA’s Well Construction Standards were at best ambiguous and open to different interpretations.</td>
<td>Inadequate well design</td>
<td>See Causal Factor 3.</td>
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</tr>
<tr>
<td>8</td>
<td>The company’s personnel on the rig demonstrated a manifestly inadequate understanding of PTTEPAA’s Well Construction Standards and knowledge of what they required.</td>
<td>Inadequate worker competence</td>
<td>Yes. Part A Item 2.4 requires “a sufficient number of workers with the requisite skills, experience and training to perform the tasks assigned to them”.</td>
<td>Adequately covered Not fully covered. There is no explicit requirement to confirm (via internal or external mechanisms) that this is indeed the case i.e. that the person in charge is confirmed have the requisite skills/competence.</td>
</tr>
<tr>
<td>9</td>
<td>PTTEPAA’s senior personnel on the rig and onshore were also deficient in their decision-making and judgments in relation to a number of important matters. The magnitude of this failure reflected a failure of judgment and competence.</td>
<td>Inadequate management competence</td>
<td>See Causal Factor 3.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>PTTEPAA’s records and communication management were defective.</td>
<td>Inadequate communication</td>
<td>Yes in principle. Part A item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
<td>Not fully covered. There is no explicit requirement for communication of safety-critical information between stakeholders.</td>
</tr>
<tr>
<td>11</td>
<td>There was a systemic failure of communication between PTTEPAA and Atlas personnel.</td>
<td>Inadequate communication</td>
<td>See Causal Factor 10.</td>
<td></td>
</tr>
<tr>
<td>Causal factor</td>
<td>Description</td>
<td>Generalised as…</td>
<td>Is it addressed by Directive 92/91?</td>
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<tr>
<td>12</td>
<td>There were clearly ineffective exchanges of information between the two parties, with Atlas rig personnel either oblivious to key (or flawed) decisions being taken by PTTEPAA personnel or going along with them (particularly on matters pertaining to well integrity).</td>
<td>Inadequate communication</td>
<td>See Causal Factor 10</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>There was insufficient attention paid to putting in place mechanisms to assess and manage project risks, the competence of key personnel, the adequacy of WOMPs, and the interaction with contractors.</td>
<td>Inadequate risk management</td>
<td>Yes.</td>
<td>Part C item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”.</td>
</tr>
<tr>
<td>14</td>
<td>The prevailing philosophy revealed by PTTEPAA’s actions appears to have been to get the job done without delay. The evidence before the Inquiry repeatedly showed that risks were not recognised when they should have been, and not assessed properly when recognised.</td>
<td>Inadequate risk management</td>
<td>See causal factor i above</td>
<td>Various items and articles in the directive are qualified with phrases that indicate that all activity should be done to ensure/safeguard the health and safety or workers (the key words being ensure / safeguard). Item 2.5 of Part A above is one such example “to ensure their health and safety”. A possible interpretation of this requirement is that the health and safety of workers should not be sacrificed at the expense of extra-mural factors (that can include economic / time pressures).</td>
</tr>
<tr>
<td>15</td>
<td>The manifest failures within PTTEPAA extended to the interactions that the company had with the regulator, the NT DoR which, in the Inquiry’s view, had become far too comfortable.</td>
<td>Inadequate inspection (Regulatory capture)</td>
<td>N/A</td>
<td>Enforcement of the provisions of the directive together with the nature of the relationship between the regulator and regulated is not currently addressed by the directive.</td>
</tr>
</tbody>
</table>
II.7 USA Deepwater Horizon

II.7.1 Description
The Deepwater Horizon semi-submersible drilling rig suffered a blowout and explosion on 20\textsuperscript{th} April 2010 while drilling the Macondo well in the Gulf of Mexico. The water depth was 1.5km and the well had been drilled to a depth of 5.5km. The drilling had been difficult and was 6 weeks behind schedule and $58 million over-budget. The annulus around the production casing had been cemented on 19\textsuperscript{th} April, prior to temporary abandonment. There were weaknesses in the cement design and testing, which allowed hydrocarbon flow into the wellbore annulus. It then passed down the wellbore and through the shoe track barriers into the bottom of the production casing.

The integrity of the well was checked by a negative pressure test. The pressure readings suggested a leak into the wellbore. The Transocean rig crew and BP well leaders incorrectly concluded that the test was successful and that well integrity had been established. There were no standard procedures for the test and the personnel were not formally trained in it.

BP’s procedure for temporary abandonment of the well may have increased the risk of a blowout. When the drilling mud was removed, hydrocarbons entered the production casing. Indications of increased influx were overlooked for 40 minutes, until the hydrocarbons had passed through the seabed blow-out preventer (BOP) and into the riser. At 21:40 drilling mud emerged onto the drill floor. The rig crew closed the annular BOP in an attempt to shut the well in. They routed the flow from the riser into mud-gas separator (MGS) rather than the overboard diverter, which resulted in gas venting onto the rig and made ignition more likely. The flow overwhelmed the MGS, and gas migrated into the heating, ventilation and air conditioning system, resulting in ignition at 21:49.

The rig crew tried to operate the emergency disconnect system (EDS), which was intended to close the shear ram, seal the well and disconnect the rig from the BOP. This sequence, though initiated, was not successful, possibly due to explosion damage to the BOP cables. The BOP was designed to seal the well automatically upon loss of communication from the rig, but this also failed due to faulty components within it. The shear ram was closed by remote intervention 33 hours later, but also failed to seal the well.

The explosion and resulting fire caused the death of 11 workers. The Deepwater Horizon sank 36 hours later. It is estimated that nearly 5 million barrels of oil were released from the well.

II.7.2 Causal Factors and Key Recommendations

II.7.2.1 BP Report
The following is a summary of the key causal factors as outlined in the BP accident report (BP, 2010). The BP report included detailed recommendations, but these are too specific to be useful in the present study.

Causal and Contributory Factors

1. The annulus cement barrier did not isolate the hydrocarbons. The investigation team concluded that there were weaknesses in cement design and testing, quality assurance and risk assessment.

2. The shoe track barriers did not isolate the hydrocarbons.

3. The negative-pressure test was accepted although well integrity had not been established.
4. Influx was not recognised until hydrocarbons were in the riser.

5. Well control response actions failed to regain control of the well. If fluids had been diverted overboard, rather than to the MGS, there may have been more time to respond, and the consequences of the accident may have been reduced.

6. Diversion to the mud gas separator resulted in gas venting onto the rig. The design of the MGS system allowed diversion of the riser contents to the MGS vessel although the well was in a high flow condition. This overwhelmed the MGS system.

7. The fire and gas system did not prevent hydrocarbon ignition. The heating, ventilation and air conditioning system probably transferred a gas-rich mixture into the engine rooms, creating a potential source of ignition.

8. The BOP emergency mode did not seal the well. The investigation team found indications of potential weaknesses in the testing regime and maintenance management system for the BOP.

II.7.2.2 NAE/NRC Report
At the request of the U.S. Department of the Interior, a National Academy of Engineering/National Research Council (NAE/NRC) committee examined the probable causes of the Deepwater Horizon explosion, fire, and oil spill in order to identify measures for preventing similar harm in the future. The following is a summary of the key causal factors and recommendations as outlined in their final accident report (NAE/NRC (2011).

Causal and Contributory Factors

9. The flow of hydrocarbons that led to the blowout of the Macondo well began when drilling mud was displaced by seawater during the temporary abandonment process.

10. The decision to proceed to displacement of the drilling mud by seawater was made despite a failure to demonstrate the integrity of the cement job even after multiple negative pressure tests. This was but one of a series of questionable decisions in the days preceding the blowout that had the effect of reducing the margins of safety and that evidenced a lack of safety-driven decision making.

11. The reservoir formation, encompassing multiple zones of varying pore pressures and fracture gradients, posed significant challenges to isolation using casing and cement. The approach chosen for well completion failed to provide adequate margins of safety and led to multiple potential failure mechanisms.

12. The loss of well control was not noted until more than 50 minutes after hydrocarbon flow from the formation started, and attempts to regain control by using the BOP were unsuccessful. The blind shear ram failed to sever the drill pipe and seal the well properly, and the emergency disconnect system failed to separate the lower marine riser and the Deepwater Horizon from the well.

13. The BOP system was neither designed nor tested for the dynamic conditions that most likely existed at the time that attempts were made to recapture well control. Furthermore, the design, test, operation, and maintenance of the BOP system were not consistent with a high-reliability, fail-safe device.
14. Once well control was lost, the large quantities of gaseous hydrocarbons released onto the Deepwater Horizon, exacerbated by low wind velocity and questionable venting selection, made ignition all but inevitable.

15. The actions, policies, and procedures of the corporations involved did not provide an effective system safety approach commensurate with the risks of the Macondo well. The lack of a strong safety culture resulting from a deficient overall systems approach to safety is evident in the multiple flawed decisions that led to the blowout. Industrial management involved with the Macondo well–Deepwater Horizon disaster failed to appreciate or plan for the safety challenges presented by the Macondo well.

The committee also made several observations, of which the following are particularly relevant to the present study:

- The ability of the oil and gas industry to perform and maintain an integrated assessment of the margins of safety for a complex well like Macondo is impacted by the complex structure of the offshore oil and gas industry and the divisions of technical expertise among the many contractors engaged in the drilling effort.
- The regulatory regime was ineffective in addressing the risks of the Macondo well. The actions of the regulators did not display an awareness of the risks or the very narrow margins of safety.
- The extent of training of key personnel and decision makers both in industry and in regulatory agencies has been inconsistent with the complexities and risks of deepwater drilling.
- Overall, neither the companies involved nor the regulatory community has made effective use of real-time data analysis, information on precursor incidents or near misses, or lessons learned in the Gulf of Mexico and worldwide to adjust practices and standards appropriately.

**Main Recommendations**

R1 Given the critical role that margins of safety play in maintaining well control, guidelines should be established to ensure that the design approach incorporates protection against the various credible risks associated with the drilling and completion processes.

R2 The United States should fully implement a hybrid regulatory system that incorporates a limited number of prescriptive elements into a proactive, goal-oriented risk management system for health, safety, and the environment.

R3 The Bureau of Safety and Environmental Enforcement (BSEE) of the U.S. Department of the Interior and other regulators should identify and enforce safety-critical points during well construction and abandonment that warrant explicit regulatory review and approval before operations can proceed.

**II.7.2.3 National Commission Report**

The following is a summary of the key causal factors and recommendations as outlined in the National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling’s report to the President (National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling (2011)).
Causal and Contributory Factors

16. Cementing. BP’s fundamental mistake was its failure - notwithstanding the inherent uncertainty of cementing and the many specific risk factors surrounding the cement job at Macondo - to exercise special caution (and, accordingly, to direct its contractors to be especially vigilant) before relying on the primary cement as a barrier to hydrocarbon flow.

17. Negative-pressure test. It is now undisputed that the negative-pressure test at Macondo was conducted and interpreted improperly. There was no standard procedure for running or interpreting the test.

18. Temporary abandonment procedures. BP’s decision to displace mud from the riser before setting another barrier unnecessarily and substantially increased the risk of a blowout.

19. Kick detection. The drilling crew and other individuals on the rig also missed critical signs that a kick was occurring. The crew could have prevented the blowout - or at least significantly reduced its impact - if they had reacted in a timely and appropriate manner. In the future, the instrumentation and displays used for well monitoring must be improved.

20. Diversion and blowout preventer activation. Diverting the flow overboard and/or activating the blind shear ram may not have prevented the explosion, but likely could have given the crew more time and perhaps limited the impact of the explosion. In the future, well-control training should include simulations and drills for such emergencies.

The National Commission also identified the following root causes of the accident, including overarching management failures by industry and regulatory failures:

21. BP’s management process did not adequately identify or address risks created by late changes to well design and procedures.

22. Halliburton and BP’s management processes did not ensure that cement was adequately tested.

23. BP, Transocean, and Halliburton failed to communicate adequately. As a result, individuals often found themselves making critical decisions without a full appreciation for the context in which they were being made (or even without recognition that the decisions were critical).

24. Transocean failed to adequately communicate lessons from an earlier near-miss to its crew.

25. Decision making processes at Macondo did not adequately ensure that personnel fully considered the risks created by time- and money-saving decisions.

26. MMS regulations were inadequate to address the risks of deepwater drilling. Many critical aspects of drilling operations were left to industry to decide without agency review. For instance, there was no requirement, let alone protocol, for a negative-pressure test, the misreading of which was a major contributor to the Macondo blowout. Nor were there detailed requirements related to the testing of the cement essential for well stability.

Main Recommendations

R4 The Department of the Interior should supplement the risk-management program with prescriptive safety and pollution-prevention standards that are developed and selected in consultation with international regulatory peers and that are at least as rigorous as the leasing terms and regulatory requirements in peer oil-producing nations.
R5 The Department of the Interior should develop a proactive, risk-based performance approach specific to individual facilities, operations and environments, similar to the “safety case” approach in the North Sea.

R6 Working with the International Regulators’ Forum and other organisations, Congress and the Department of the Interior should identify those drilling, production, and emergency-response standards that best protect offshore workers and the environment, and initiate new standards and revisions to fill gaps and correct deficiencies. These standards should be applied throughout the Gulf of Mexico, in the Arctic, and globally wherever the international industry operates. Standards should be updated at least every five years as under the formal review process of the International Organisation for Standardisation (ISO).

II.7.3 Comparison with the Directive

Table II.9 compares the key causal factors from the three reports with the provisions of the directive, and comments on the extent to which they are addressed by the directive, in order to identify gaps or weak requirements that could usefully be improved. Although there is some overlap between the causal factors in the different reports, this multiple comparison is worthwhile because each report expresses its conclusions in slightly different ways, which may affect the comparison with the directive.

As for the Montara incident assessed above (See 4), a comparison of the various recommendations made versus the directive has not been undertaken. This is because they largely relate to wider issues not directly pertaining to matters governed by the directive. For example, recommendation 1, 3, 4, 5 and 6 address the strategy adopted by the regulator to ensure compliance with legislative provisions; the design of the regulatory instrument is the focus of recommendation two (R2). These recommendations are analysed in section II.8.3.

Table II.9 Deepwater Horizon: Comparison of Causal Factors Against the Directive

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as...</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The annulus cement barrier did not isolate the hydrocarbons. The investigation team concluded that there were weaknesses in cement design and testing, quality assurance and risk assessment.</td>
<td>In adequate well control equipment</td>
<td>Yes in principle. Part A Item 5 states “suitable well control equipment must be provided during borehole operations to protect against blowouts”.</td>
<td>Not fully covered. There is no explicit requirement relating to the need to confirm the adequacy and suitability (via an independent party, internal or 3rd party) of well design and procedures.</td>
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<td></td>
<td></td>
<td></td>
<td>Yes, in principle</td>
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<td></td>
<td></td>
<td></td>
<td>Well-design is not explicitly covered although provisions exist to govern the proper use of equipment used in well operations.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Not fully covered.</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>There is no explicit requirement relating to well design and procedures.</td>
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### MANAGING RISK

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Weak or absent quality assurance (QA) procedure / weak risk assessments</td>
<td>Yes, in principle</td>
<td>It is noted that the directive includes a number of provisions for proper design of the workplace (see Item 1 of Part A) and that process / plant / well control equipment etc. can be interpreted as constituting part of the workplace. However, the wording as it currently stands is too vague and ambiguous to confirm if this is the case.</td>
<td>Not fully covered.</td>
</tr>
<tr>
<td>2.</td>
<td>The shoe track barriers did not isolate the hydrocarbons.</td>
<td>Inadequate well design</td>
<td>See Causal Factor 1.</td>
<td></td>
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<tr>
<td></td>
<td>The exact reasons are not given but could potentially results from inadequate design or a fault.</td>
<td>In adequate well control equipment</td>
<td>See Causal Factor 1.</td>
<td></td>
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</tbody>
</table>
### Causal factor

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<tr>
<th>3.</th>
<th>The negative-pressure test was accepted although well integrity had not been established. The exact reasons are not given, but are possibly due to one or more of the following (or some other unidentified/unknown factor) • Lack of requisite knowledge / expertise / competency among workers. • Poor judgement. • Lack of procedures to inform and govern how the results if such tests should be interpreted. • Economic/time pressures to finish the task as quickly as possible. • Lack of hazard awareness as to the consequences of such a decision / decision making under uncertainty.</th>
<th>Inadequate decision-making</th>
<th>Is it addressed by Directive 92/91? Yes/No and Relevant Section</th>
<th>To what extent?</th>
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<td></td>
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<td></td>
<td>Yes in principle. Provisions to ensure worker competency are given in Item 2.4 of Part A which states thus “When workers are at a workplace, there must be a sufficient number of workers with the requisite skills, experience and training to perform the tasks assigned to them”. Part A Item 2.5 also states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”. Various items and articles in the directive are qualified with phrases that indicate that all activity should be done to ensure/safeguard the health and safety or workers (the key words being ensure / safeguard). Item 2.5 of Part A above is one such example “to ensure their health and safety”.</td>
<td>Not fully covered. There is no explicit requirement for safety-driven decision-making / or a specific requirement for training on how to approach decisions under uncertainty.</td>
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<td></td>
<td>Inadequate hazard awareness (safety culture)</td>
<td>Hazard awareness amongst personnel is central to achieving risk management goals. A safety culture (loosely defined to mean a collective awareness of danger coupled with the processes and mind set to avert such dangers) within an organisation (or across organisations) is widely considered to be an effective way of ensuring high levels of hazard awareness amongst personnel.</td>
<td>Many elements combine to develop and foster a safety culture. This includes (but is not limited to) factors such as continuous training, workforce engagement, workforce involvement in preparation of the safety related documents. The directive currently includes some but not all of these. The utility of the directive can be enhanced by including an explicit requirement to develop and foster a safety culture.</td>
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</table>
### Causal factor

| 4. | Influx was not recognised until hydrocarbons were in the riser. Why? As with the above, exact reasons are not given. This is generalised to be due to inadequate well control. | Inadequate well control and monitoring | Yes. Part A Item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”. Part A Item 5 states “suitable well control equipment must be provided during borehole operations to protect against blowouts”. | Not fully covered. There is no explicit requirement for early detection of hydrocarbon influx to the well. However, this aspect can be judged to fall under the provision listed in Part A Item 5. |

| 5. | Well control response actions failed to regain control of the well. If fluids had been diverted overboard, rather than to the MGS, there may have been more time to respond, and the consequences of the accident may have been reduced | Inadequate emergency response | Yes, in principle. Part C Item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to …. limit the spread of accidents and allow controlled evacuation of the workplace in emergency situations”. Furthermore, Part C Item 6 requires that “workers must be trained in the appropriate actions to be taken in emergencies”. This is specified under the heading “Means of evacuation and escape” and places an emphasis on “escape actions” rather than “decision making protocols or procedures” in emergency situations (in particular well control incidents). | Not fully covered. Although emergency training and protection from harmful atmospheres are covered, there is no explicit requirement to develop adequate procedures for emergency well control. |
### Causal factor 6

**Description:** Diversion to the mud gas separator resulted in gas venting onto the rig. The design of the MGS system allowed diversion of the riser contents to the MGS vessel although the well was in a high flow condition. This overwhelmed the MGS system.

**Generalised as:** Inadequate design (of the MGS)

**Is it addressed by Directive 92/91?** Yes, in principle.

Part C item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to … limit the spread of accidents and allow controlled evacuation of the workplace in emergency situations”.

With regards to mechanical and electrical equipment and plant, the directive includes provisions to govern their use. Item 3 of Article 3 states that “Mechanical equipment and plant must be of adequate strength… and suitable for the purpose for which it is intended”.

**To what extent?** Adequately covered.

### Causal factor 7

**Description:** The fire and gas system did not prevent hydrocarbon ignition. The heating, ventilation and air conditioning system probably transferred a gas-rich mixture into the engine rooms, creating a potential source of ignition.

**Generalised as:** Inadequate design (of the F&G system)

**Is it addressed by Directive 92/91?** Yes.

Part A Item 4.2 states “adequate safety equipment must be maintained ready for use and in good working order at all times”.

**To what extent?** Adequately covered.

### Causal factor 8

**Description:** The BOP emergency mode did not seal the well. The investigation team found indications of potential weaknesses in the testing regime and maintenance management system for the BOP.

**Generalised as:** Failure of safety systems

**Is it addressed by Directive 92/91?** Yes.

Part A Item 4.2 states “adequate safety equipment must be maintained ready for use and in good working order at all times”.

**To what extent?** Not fully covered.

There is no requirement to confirm or verify that the requirement is met.
### Causal factor

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
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<th>To what extent?</th>
<th>NAE/NRC Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>The flow of hydrocarbons that led to the blowout of the Macondo well began when drilling mud was displaced by seawater during the temporary abandonment process.</td>
<td>Failure of well control</td>
<td>Yes. Part A item 5 states “suitable well control equipment must be provided during borehole operations to protect against blowouts”.</td>
<td>Adequately covered.</td>
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<tr>
<td></td>
<td>Failure of well control</td>
<td>Inadequate well design (with particular regard to mud specification)</td>
<td>Yes, in principle Well-design is not explicitly covered although provisions exist to govern the proper use of equipment used in well operations. It is noted that the directive includes a number of provisions for proper design of the workplace (see item 1 of Part A) and that process / plant / well control equipment etc. can be interpreted as constituting part of the workplace. However, the wording as it currently stands is too vague and ambiguous to confirm if this is the case.</td>
<td>Not fully covered.</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>The decision to proceed to displacement of the drilling mud by seawater was made despite a failure to demonstrate the integrity of the cement job even after multiple negative pressure tests. This was but one of a series of questionable decisions in the days preceding the blowout that had the effect of reducing the margins of safety and that evidenced a lack of safety-driven decision making.</td>
<td>Inadequate decision-making</td>
<td>See Causal Factor 3.</td>
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<tr>
<td>11</td>
<td>The reservoir formation, encompassing multiple zones of varying pore pressures and fracture gradients, posed significant challenges to isolation using</td>
<td>Inadequate well design</td>
<td>See Causal Factor 1.</td>
<td>Not fully covered.</td>
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Revision No.: 1 - Final
Date: 2013-02-15
Page II.35
<table>
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<th>Causal factor</th>
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<tbody>
<tr>
<td>12</td>
<td>The loss of well control was not noted until more than 50 minutes after hydrocarbon flow from the formation started, and attempts to regain control by using the BOP were unsuccessful.</td>
<td>Inadequate well control (and monitoring)</td>
<td>See Causal Factor 4.</td>
<td>See Causal Factor 4.</td>
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<td>Inadequate emergency planning / response</td>
<td>Yes, in principle.</td>
<td>Not fully covered.</td>
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<td></td>
<td>Part C Item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to …. limit the spread of accidents and allow controlled evacuation of the workplace in emergency situations”.</td>
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<tr>
<td>13</td>
<td>The BOP system was neither designed nor tested for the dynamic conditions that most likely existed at the time that attempts were made to recapture well control. Furthermore, the design, test, operation, and maintenance of the BOP system were not consistent with a high-reliability, fail-safe device.</td>
<td>Inadequate design (of the BOP)</td>
<td>Yes.</td>
<td>Adequately covered</td>
</tr>
<tr>
<td></td>
<td>With regards to mechanical and electrical equipment and plant, the directive includes provisions to govern their use. Item 3 of article 3 states that “Mechanical equipment and plant must be of adequate strength…and suitable for the purpose for which it is intended”.</td>
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<tr>
<td></td>
<td>On the specific matter of well control equipment (of which the BOP is a central element), Article 5 holds that “suitable well control equipment must be provided for use during borehole operations to protect against blowouts”</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Failure of safety systems (the BOP)</td>
<td>Yes.</td>
<td>Not fully covered.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Part A item 4.2 states “adequate safety equipment must be maintained ready for use and in good working order at all times”.</td>
<td></td>
<td>There is no requirement to confirm or verify that the requirement is met.</td>
<td></td>
</tr>
</tbody>
</table>
Causal factor | Description | Generalised as… | Is it addressed by Directive 92/91? Yes/No and Relevant Section | To what extent?
--- | --- | --- | --- | ---
14 | Once well control was lost, the large quantities of gaseous hydrocarbons released onto the Deepwater Horizon, exacerbated by low wind velocity and questionable venting selection, made ignition all but inevitable. | Inherent hazards | Yes. Part C item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”. The directive also includes numerous provisions to protect against explosive atmospheres. | Adequately covered. It would be inappropriate to provide a more specific requirement for this inherent hazard. |
15 | The actions, policies, and procedures of the corporations involved did not provide an effective system safety approach commensurate with the risks of the Macondo well. The lack of a strong safety culture resulting from a deficient overall systems approach to safety is evident in the multiple flawed decisions that led to the blowout. Industrial management involved with the Macondo well–Deepwater Horizon disaster failed to appreciate or plan for the safety challenges presented by the Macondo well. | Inadequate safety management | Yes, in principle. Part C item 1.1(d) requires the safety and health document to “show that the management system is adequate to comply with the provisions of directive 89/391/EEC and this directive”. | Not fully covered. The requirements are not sufficient to promote a strong safety culture. |
16 | Cementing. Failure to exercise special caution (and, accordingly, to direct contractors to be especially vigilant) before relying on the primary cement as a barrier to hydrocarbon flow. | Inadequate hazard awareness | Yes. Part C Item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and “show that adequate precautions have been taken to avoid the accidents”. | Not fully covered. There is no explicit requirement for safety-critical task analysis. |
17 | Negative-pressure test. The test at Macondo was conducted and interpreted improperly. There was no standard procedure for running or interpreting the test. | Inadequate safety-critical procedures (well operations) | Yes in principle. Part A Item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”. | Not fully covered. There is no explicit requirement for safety-critical task analysis. |
### Causal Factor | Description | Generalised as... | Is it addressed by Directive 92/91? | To what extent? |
<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Temporary abandonment procedures. BP’s decision to displace mud from the riser before setting another barrier unnecessarily and substantially increased the risk of a blowout.</td>
<td>Inadequate well control procedures</td>
<td>Yes in principle. Part A Item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
<td>Not fully covered. There is no explicit requirement relating to well control procedures.</td>
</tr>
<tr>
<td>19</td>
<td>Kick detection. The instrumentation and displays used for well monitoring must be improved</td>
<td>Inadequate well control and monitoring</td>
<td>See Causal Factor 4. Yes in principle. Part A item 5 states “suitable well control equipment must be provided during borehole operations to protect against blowouts”.</td>
<td>Not fully covered. There is no requirement to confirm or verify that the requirement is met.</td>
</tr>
<tr>
<td>20</td>
<td>Diversion and blowout preventer activation. Well-control training should include simulations and drills for such emergencies</td>
<td>Inadequate emergency planning</td>
<td>Yes, in principle. Part C Item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to … limit the spread of accidents and allow controlled evacuation of the workplace in emergency situations”.</td>
<td>Not fully covered. Although emergency training and protection from harmful atmospheres are covered, there is no explicit requirement to train for emergency well control.</td>
</tr>
<tr>
<td>21</td>
<td>BP’s management process did not adequately identify or address risks created by late changes to well design and procedures.</td>
<td>Inadequate risk management (hazard identification)</td>
<td>Yes. Part C Item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”.</td>
<td>Not fully covered. There is no explicit requirement to assess the risks in design changes.</td>
</tr>
<tr>
<td>22</td>
<td>Halliburton and BP’s management processes did not ensure that cement was adequately tested.</td>
<td>Inadequate safety- critical procedures</td>
<td>Yes, in principle. Part C Item 1.1(d) requires the safety and health document to “show that the management system is adequate to comply with the provisions of directive 89/391/EEC and this directive”.</td>
<td>Not fully covered. The requirements are not sufficient to ensure safety-critical processes are adequately managed.</td>
</tr>
</tbody>
</table>
### Causal factor

<table>
<thead>
<tr>
<th>Causal factor</th>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>23</td>
<td>BP, Transocean, and Halliburton failed to communicate adequately. As a result, individuals often found themselves making critical decisions without a full appreciation for the context in which they were being made (or even without recognition that the decisions were critical).</td>
<td>Inadequate</td>
<td>Yes in principle.</td>
<td>Not fully covered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>communicatio</td>
<td>Part A Item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
<td>There is no explicit requirement for communication of safety-critical information between stakeholders.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>Article 3.2 includes a requirement for the principal employer (i.e. the person in charge of the workplace) to “coordinate the implementation of all the measures concerning the safety and health of the workers…). This is assumed to include adequate communication protocols as this is central to safeguarding health and safety.</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Transocean failed to adequately communicate lessons from an earlier near-miss to its crew.</td>
<td>Inadequate</td>
<td>Yes in principle.</td>
<td>Not fully covered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>hazard awareness</td>
<td>Part A Item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
<td>There is no explicit requirement for communication of lessons from incidents.</td>
</tr>
<tr>
<td>25</td>
<td>Decision making processes at Macondo did not adequately ensure that personnel fully considered the risks created by time- and money-saving decisions</td>
<td>Inadequate</td>
<td>Yes in principle.</td>
<td>Not fully covered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>decision-making</td>
<td>Part C Item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to avoid the accidents”.</td>
<td>There is no explicit requirement for safety-driven decision-making to ensure an appropriate balance between time, money and safety.</td>
</tr>
<tr>
<td>26</td>
<td>MMS regulations were inadequate to address the risks of deepwater drilling. Many critical aspects of drilling operations were left to industry to decide without</td>
<td>Inadequate</td>
<td>No</td>
<td>Not fully covered.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>safety-critical</td>
<td></td>
<td>There is no explicit requirement for safety-critical task analysis.</td>
</tr>
</tbody>
</table>
### Causal factor

<table>
<thead>
<tr>
<th>Description</th>
<th>Generalised as…</th>
<th>Is it addressed by Directive 92/91?</th>
<th>To what extent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure in self-governing regime</td>
<td></td>
<td>No</td>
<td>The directive is targeted at the employer and does not require requirements for external intervention by any party (say the regulator or an independent 3rd party). Adequacy / acceptability of procedures / protocols / provisions as outlined in the safety and health document is under the sole purview / discretion of the employer. The regime instituted by the directive is in effect a self-governing regime.</td>
</tr>
<tr>
<td>Inadequate hazard awareness (for deepwater drilling)</td>
<td>Yes.</td>
<td>Part C Item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”. See Causal Factor 3.</td>
<td>Not adequately covered. It would be beneficial to mention that special care should be taken when drilling in deep water (&gt; 500m and in other challenging locations (e.g. the arctic).</td>
</tr>
</tbody>
</table>

## II.8 CONCLUSIONS

### II.8.1 Conclusions on Causal Factors

Five major offshore accidents have been used for the analysis in this appendix. They consist of two blowouts (Deepwater Horizon and Montara), a collision-induced wellhead leak (Usumancita), a collision-induced riser fire (Mumbai High North), and a semi-submersible explosion and capsize (P-36). The key causal factors and recommendations have been identified from the available accident investigations, and compared with the provisions of the directive 92/91 EEC.

The directive includes goal-setting requirements to identify hazards and take adequate precautions, because of this it has to be concluded, at the top level, that the principles of the directive means that it covers all the causal factors of any accidents (including the five reviewed) which harm or had the potential to harm workers.
Furthermore, because the accidents involved specific scenarios, whereas the directive is necessarily worded in general terms so as to cover a full range of situations, it is concluded, at the top level, that its requirements cover all of the causal factors from the accidents. It is also concluded that it would not be appropriate to make these requirements more specific, because this would potentially fail to address many other accidents that might occur.

Nevertheless, many of the causal factors are not fully covered by the requirements of the directive. It is possible to add more specific requirements, to make the directive more comprehensive and useful in protecting against large groups of causal factors. Potential requirements / areas are detailed in the next section. These indicate the type and general direction of improvements that could be made to the directive.

It is also noted that most of the specific requirements (for example those outlined in Items 8 and 9 of Part A of the Directive) do not relate to any of the causal factors in the chosen accidents. This may be because these requirements are successfully implemented world-wide, preventing many types of accidents. Alternatively, it may be because the requirements address occupational safety and health but not major accident hazards, which might indicate an imbalance in the directive. Another possibility is that these other requirements are unnecessary and do not contribute to safety at all. These possibilities cannot be definitively resolved through the present analysis of accidents.

As a general comment, there is no requirement to confirm or verify that any of the requirements are met (say by the regulator or an independent 3rd party). This is, therefore, identified as one area where the directive could be improved.

II.8.2 Recommendations to Improve the Directive

The following outline areas in which the directive could be enhanced to make the directive more comprehensive and useful in protecting against large groups of causal factors. In some cases, these are simply clearer and more explicit requirements of the existing provisions of the directive.

1. A safety management system intended to promote operational excellence and a strong safety culture.
2. Safety-driven decision-making to ensure an appropriate balance between time, money and safety.
3. Project risk management to manage business risks that may impact on worker safety.
4. Identification and analysis of safety-critical tasks, so as to identify tasks that have a critical impact on safety (such as cement testing and negative-pressure testing) and ensure that appropriate precautions are developed for them, such as procedures or competence requirements.
5. Compliance with safety-critical operating procedures.
6. Communication of safety-critical information between stakeholders, to ensure that companies exchange information that is necessary to ensure safety and health.
7. Communication of lessons from incidents (i.e. near-misses and accidents).
8. Inform workers about their potential contribution to hazards identified in the safety and health document.
9. Adequate well design to maintain safety margins.
10. Well control procedures covering normal operations and emergency response, including risk assessment, influx monitoring and BOP operation.
11. Adequate weather forecasts for operations sensitive to adverse weather.
12. Operating procedures taking account of adverse weather.
13. Specific design criteria and operating limits in adverse weather.
15. Joint procedures for vessel-platform interface operations.
16. Independently confirm or verify that the provisions of directive have been met with particular regard to the adequacy of risk assessments, procedures etc.

The sources of these requirements are documented in Table II.10, together with a brief comparison against the current provision in the directive.

These additional, more specific requirements are not a comprehensive set, because they are derived entirely from the five accidents analysed here. However, they do indicate the type of improvements that could be made to the directive.

Table II.10 Sources of Recommendations

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1.</td>
<td>A safety management system intended to promote operational excellence and a strong safety culture</td>
<td>Usumancita Causal Factor 3 P-36 Recommendation R1 DWH Causal Factor 15</td>
<td>Part C Item 1.1(d) requires the safety and health document to “show that the management system is adequate to comply with the provisions of directive 89/391/EEC and this directive”. However, it does not explicitly require a safety management system.</td>
</tr>
<tr>
<td>2.</td>
<td>Safety-driven decision-making to ensure an appropriate balance between time, money and safety</td>
<td>DWH Causal Factors 3, 10.</td>
<td>Part C Item 1.1(c) requires the safety and health document to “show that adequate precautions have been taken to avoid the accidents”. However, there is no explicit requirement for safety-driven decision-making.</td>
</tr>
<tr>
<td>3.</td>
<td>Project risk management to manage business risks that may impact on worker safety</td>
<td>Montara Causal Factors 14, 15</td>
<td>Part C item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace” and to “show that adequate precautions have been taken to avoid the accidents”. However, there is no explicit requirement to assess project risks or stakeholder interactions</td>
</tr>
<tr>
<td>4.</td>
<td>Identification, analysis and management of safety-critical tasks</td>
<td>DWH Causal Factors 16, 17, 22, 26</td>
<td>Part C item 1.1 requires the safety and health document to “identify the special sources of hazard associated with the workplace”. However, it does not explicitly require identification of safety-critical tasks, which were critical in all the accidents analysed here.</td>
</tr>
</tbody>
</table>
### Recommendation

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Relevant Accidents and Causal Factors and Recommendations</th>
<th>Current Provision in Directive 92/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Compliance with safety-critical operating procedures</td>
<td>Montara Causal Factors 1, 2,</td>
<td>Part C item 1.2 states “The employer shall observe the procedures and arrangements laid down in the safety and health document”.</td>
</tr>
<tr>
<td>6.</td>
<td>Communication of safety-critical information between stakeholders</td>
<td>DWH Causal Factor 23</td>
<td>Part A item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
</tr>
<tr>
<td>7.</td>
<td>Communication of lessons from incidents</td>
<td>DWH Causal Factor 24</td>
<td>Part A item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”. The lack of suitable investigations of onshore accidents or near-misses for the present work indicates a lack of open communication of such data.</td>
</tr>
<tr>
<td>8.</td>
<td>Inform workers about their potential contribution to hazards identified in the safety and health document</td>
<td>P-36 Causal Factor 2</td>
<td>Part A item 2.5 states “workers must be given the necessary information, instructions, training and retraining to ensure their health and safety”.</td>
</tr>
<tr>
<td>9.</td>
<td>Adequate well design to maintain safety margins</td>
<td>DWH Causal Factors 1, 2, 11,</td>
<td>Part A item 5 states “suitable well control equipment must be provided during borehole operations to protect against blowouts”. However, this does not clearly cover the overall well design, in addition to the equipment installed.</td>
</tr>
<tr>
<td>10.</td>
<td>Well control procedures covering normal operations and emergency response</td>
<td>DWH Causal Factors 4, 5, 12, 18, 19, 20, 21,</td>
<td>Although well control equipment and emergency training and protection from harmful atmospheres are covered, there is no explicit requirement for well control procedures, including risk assessment, influx monitoring and BOP operation.</td>
</tr>
<tr>
<td>11.</td>
<td>Adequate weather forecasts for operations sensitive to adverse weather</td>
<td>Usumancita Causal Factor 1, and Recommendation R1</td>
<td>Although there is a general requirement for proper design, operation and use of the workplace, and for workers to be provided with information, there is no specific requirement for weather information.</td>
</tr>
<tr>
<td>12.</td>
<td>Operating procedures taking account of adverse weather</td>
<td>Usumancita Causal factor 5, 6 and Recommendation R1</td>
<td>Although there is a general requirement for training in emergencies, there is no requirement for the training to take account of the weather conditions that may cause the emergency.</td>
</tr>
<tr>
<td>13.</td>
<td>Specific design criteria and operating limits in adverse weather</td>
<td>Usumancita Causal Factor 2</td>
<td>Although there is a requirement to “withstand the environmental forces anticipated”, there is no guidance on the probability of exceedance that is to be assumed.</td>
</tr>
<tr>
<td>14.</td>
<td>Ballasting procedures covering normal operations and emergency response on floating platforms</td>
<td>P-36 Causal Factor 7</td>
<td>Although there is a requirement for emergency training, there is no explicit requirement to develop adequate emergency procedures to maintain the integrity and stability of an offshore platform.</td>
</tr>
<tr>
<td>15.</td>
<td>Joint procedures for vessel-platform interface operations</td>
<td>MHN Causal Factors 2,4</td>
<td>There is no current requirement on this.</td>
</tr>
</tbody>
</table>
II.8.3 Conclusions on Legislative Approach

Some of the recommendations from the accident investigations relate to broader questions of legislation for safety and health, and so are relevant to the present study. The following key conclusions are drawn on this subject.

17. The regulatory system should ideally combine a goal-based approach with prescriptive minimum standards in key areas.

18. Non-mandatory guidance should be issued to support industry in key areas where more clarity is needed as to the regulatory intent.

19. Regulators should identify and enforce safety-critical points in key areas that warrant explicit review and approval before operations can proceed.

Table II.11 shows the source of these conclusions, which will be considered further in the remaining stages of this project.

Table II.11 Sources of Recommendations for conclusions on the legislative approach

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>17</td>
<td>The regulatory system should combine a goal-based approach with prescriptive minimum standards in key areas</td>
<td>DWH Recommendation R2, R4, R5 Montara Recommendation R1</td>
<td>The directive already follows this approach</td>
</tr>
<tr>
<td>18</td>
<td>Non-mandatory guidance should be issued to support industry in key areas</td>
<td>DWH Recommendation R1, R6 Montara Recommendation R2</td>
<td>There is no formal provision on this</td>
</tr>
<tr>
<td>19</td>
<td>Regulators should identify and enforce safety-critical points in key areas that warrant explicit review and approval before operations can proceed.</td>
<td>DWH Recommendation R3 Montara Causal Factor 15</td>
<td>There is no formal provision on this</td>
</tr>
</tbody>
</table>

II.9 Terms and Abbreviations used in this Appendix

<table>
<thead>
<tr>
<th>Term / Abbreviations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSEE</td>
<td>Bureau of Safety and Environmental Enforcement</td>
</tr>
<tr>
<td>BOP</td>
<td>Blowout Preventer</td>
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<tr>
<td>DNV</td>
<td>Det Norske Veritas</td>
</tr>
</tbody>
</table>
## Term / Abbreviations

<table>
<thead>
<tr>
<th>Term / Abbreviations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DWH</td>
<td>Deep Water Horizon</td>
</tr>
<tr>
<td>EDT</td>
<td>Emergency Drain Tank</td>
</tr>
<tr>
<td>EEC</td>
<td>European Economic Community</td>
</tr>
<tr>
<td>EER</td>
<td>Evacuation, Escape and Rescue</td>
</tr>
<tr>
<td>E&amp;P</td>
<td>Definition not given in source document. Used in reference to one of the organisations involved in the inquiry - See Page 2 of the commission’s report into the P36 accident (Inquiry Commission P36 Accident, 2001). Assumed to refer to the Exploration and Production arm of Petrobras (the organisation responsible for operating the P-36 facility).</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>ISO</td>
<td>International Organisation for Standardisation</td>
</tr>
<tr>
<td>MGS</td>
<td>Mud Gas Separator</td>
</tr>
<tr>
<td>MHN</td>
<td>Mumbai High North</td>
</tr>
<tr>
<td>MSV</td>
<td>Multi-purpose Support Vessel</td>
</tr>
<tr>
<td>N/A</td>
<td>Not applicable</td>
</tr>
<tr>
<td>NAE</td>
<td>National Academy of Engineering</td>
</tr>
<tr>
<td>NRC</td>
<td>National Research Council</td>
</tr>
<tr>
<td>NT (DoR)</td>
<td>Northern Territory (Department of Resources)</td>
</tr>
<tr>
<td>OIM</td>
<td>Offshore Installation Manager</td>
</tr>
<tr>
<td>OSV</td>
<td>Offshore Supply Vessels</td>
</tr>
<tr>
<td>PCCC</td>
<td>Pressure-containing Anti-corrosion Caps</td>
</tr>
<tr>
<td>PTTEP (AA)</td>
<td>Petroleum Authority of Thailand Exploration and Production Public Company Limited (Australia)</td>
</tr>
<tr>
<td>QA</td>
<td>Quality Assurance</td>
</tr>
<tr>
<td>SBV</td>
<td>Standby Vessel</td>
</tr>
<tr>
<td>SIMOPS</td>
<td>SIMultaneous OPerationS</td>
</tr>
<tr>
<td>SMS</td>
<td>Safety Management System</td>
</tr>
<tr>
<td>UK</td>
<td>United Kingdom</td>
</tr>
<tr>
<td>UKOOA</td>
<td>United Kingdom Offshore Operators Association</td>
</tr>
<tr>
<td>WHP</td>
<td>Well Head Platform</td>
</tr>
<tr>
<td>WOMP</td>
<td>Well Operations Management Plan</td>
</tr>
</tbody>
</table>
II.10 References


Oil Rig Disaster (Date unknown) “Rig Incident List” Available online at: http://home.versatel.nl/the_sims/rig/losses.htm. [Accessed 1st October 2012].

Verma, J.B., 2011, Mumbai High Incident and Regulatory Progress Since, Oil Industry Safety Directorate.
APPENDIX

III

STAKEHOLDERS ENGAGED IN REVIEW
III. STAKEHOLDERS ENGAGED IN REVIEW

III.1 European Commission Contact
The contract was with Directorate General Employment and Social Affairs and was managed by them by Matthew Heppleston from their Luxembourg office:

European Commission,
Directorate General for Employment Social Affairs and Inclusion,
Health Safety and Hygiene at Work (EMPL.B.3),
Euroforum Building, Office 2195A,
10 Rue Stumper,
L-2920 Luxembourg.

III.2 Ad Hoc working Group
An advisory group was developed to support the Commission and Matthew Heppleston in overviewing the technical quality of the work. This group consisted of the personnel in Table III.1.

Table III.1 Ad Hoc Steering Group Membership

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stewart Fraser</td>
<td>International Association of Oil and Gas Producers, 209-215 Blackfriars Road, London SE1 8NL, United Kingdom.</td>
</tr>
<tr>
<td>Linda Halvorsen</td>
<td>Petroleum Safety Authority Professor Olav Hanssens Vei 10, 4003 Stavanger, Norway.</td>
</tr>
<tr>
<td>Matthew Heppleston</td>
<td>European Commission, Directorate General for Employment Social Affairs and Inclusion, Health Safety and Hygiene at Work (EMPL.B.3), 10 Euroforum Building, Office 2195A, Rue Stumper, L-2920 Luxembourg.</td>
</tr>
<tr>
<td>Christoff Kokkofitis</td>
<td>Department of Labour Inspection, Apelli 12, 1493 Nicosia, Cyprus.</td>
</tr>
</tbody>
</table>
III.3 Stakeholders Invited to, and Who Input to this Review

The stakeholder organisations invited to input to the review are presented in Table III.2, along with how their input was gained.

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation Invited to Input to this Review</th>
<th>Organisation Type</th>
<th>Took part in:</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>Federal Ministry of Labour, Social Affairs and Consumer Protection</td>
<td>Regulator</td>
<td>-</td>
<td>✓</td>
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<td></td>
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<tr>
<td>Belgium</td>
<td>Afdeling van het toezicht op de chemische risico's FOD Werkgelegenheid, Arbeid en Sociaal Overleg</td>
<td>Regulator</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Bulgaria</td>
<td>Ministry of Economy</td>
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<td>any mineral extraction through drilling in the</td>
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<td>Survey</td>
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<td>UNITE, RMT</td>
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<td>European and International organisations, Non-governmental organisations and Governmental organisations.</td>
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<td>Provided input via the cross- industry session held in the Brussels office of OGP.</td>
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<td>Declined to provide input as the work does not explicitly consider environmental matters.</td>
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<td>World Development Movement (WDM)</td>
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<td>Responded indicating that the scope of the work is not an area they can comment on.</td>
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<td>Organisation Type</td>
<td>Took part in:</td>
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<td>Responded indicating willingness to provide input. However, no response was received at the time of compiling this report.</td>
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<td>Invited to take part but no response received (despite multiple attempts to make contact).</td>
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<td>Joint Nature Conservation Committee</td>
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<td>Responded stating the focus of the directive is outside their primary remit (which is biodiversity). Consequently, no input was provided.</td>
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<td>Replied indicating they not able to provide a view on most of the questions contained within the questionnaire as they focus primarily on Health and Safety as opposed to environmental issues (which is their remit).</td>
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<td>Responded stating the focus of the work is not one they have direct expertise in.</td>
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<td>Responded indicating willingness to provide input. However, no response was received at the time of compiling this report.</td>
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APPENDIX

IV

SEMI-STRUCTURED INTERVIEW QUESTIONS SET
IV. SEMI-STRUCTURED INTERVIEW QUESTIONS SET

IV.1 Introduction to Appendix
This appendix presents the semi-structured interview questions which were developed. They are the questions which were asked at the interviews with stakeholders.

The questions are extracted from the document agreed with the Commission and its Ad Hoc Steering Committee. The numbering has been used to enable them to be cross referenced to the review’s findings and discussion (see Section 6 of the main report), and hence to its recommendations (see Section 7 of the main report).

The semi-structured interview questions were shared in a document with stakeholders prior to the interviews taking place. This was to allow them the time to prepare for the interview. They were given to the stakeholders in a document that presented the objectives of the review and explained the interview question set. In this appendix the question set from the document shared with the stakeholders interviewed are presented without the introductory text.

IV.2 Questions to be Answered by Stakeholders

IV.2.1 Demographic Questions

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<td>Organisation:</td>
<td></td>
</tr>
<tr>
<td>Stakeholder type:</td>
<td>(e.g. Regulator, Operator, Union, NGO)</td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td></td>
</tr>
</tbody>
</table>

IV.2.2 Initial questions
The scope of the study is quite extensive and, as such, a significant number of questions have been developed to ensure that each of the defined themes is explored as robustly as possible.

The initial set of questions in this section (five in all) cover broad overarching themes associated with this study which are developed further in the sections that follow. They are included here to ensure that responses to key themes are elicited first (and as a minimum) should there not be sufficient time to allow for responses to all the questions to be provided. Where there is ample time to address the entire question set, it might appear that there is some repetition between questions. This is recognised and represents a core element of the study design.

At the end of the semi-structured interview question set, you will also have the opportunity to express your views on the objectives of this study and (potentially) any issues not addressed in the semi-structured interview question set (or perhaps a related issue). These will be most welcome.
1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO2 injection, CCS and fracking?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
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</table>

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
</table>

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
</table>

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
</table>
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: | Sources of evidence:

---

**IV.2.3 Context**

This and subsequent section go into more details of the points already covered. It is understood that not all stakeholders will be able to answer all questions. Also it is recognised that some questions will have been covered in responses to the questions above.

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: | Sources of evidence:

---

7. What is the balance of activity between offshore and onshore industries in your country?

   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: | Sources of evidence:

---

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: | Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

   **Response:**

   **Sources of evidence:**

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

   **Response:**

   **Sources of evidence:**

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

   **Response:**

   **Sources of evidence:**

**IV.2.4 Regulatory approach**

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

   **Response:**

   **Sources of evidence:**
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

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<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
</table>

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</table>

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</table>

16. A number of factors are central to developing a safety culture (or safety climate) amongst the workforce. Key amongst these is the need to foster high levels of engagement between all stakeholders (e.g. employers, operators and regulators) and the workforce on safety related issues. Does the legislation in your country include provisions to encourage workforce engagement? Such provisions might include (but are not limited to) requirements for stakeholders to (1) engage with the workforce; (2) share good practice, (3) develop reporting systems (particularly anonymous ones); (4) ensure continuous training etc.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
</table>

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

| Response: | Sources of evidence: |
18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

Sources of evidence:

IV.2.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How does your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? As an example, the potential for a blowout can be considered to be a “special source” of hazard associated with drilling activity; other “special sources” would apply to other segments of the exploration/production lifecycle. Please outline key examples associated with each stage (rather than provide a complete list).
   b. In particular, does the relevant legislation in your country include provisions for major accident hazards?
   c. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

Sources of evidence:
22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:

Sources of evidence:
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response: 

Sources of evidence: 

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response: 

Sources of evidence: 

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response: 

Sources of evidence: 

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response: 

Sources of evidence: 

**IV.2.6 Enforcement**

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response: 

Sources of evidence:
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:  
Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:  
Sources of evidence:

IV.2.7 Effectiveness

This section asks question to build on the answer provided to Question 2. It is likely that the answer to Question 2 will have covered these questions before they have been asked.

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:  
Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:  
Sources of evidence:
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:  
Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:  
Sources of evidence:

IV.2.8 Evaluation
38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:  
Sources of evidence:
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

Sources of evidence:

IV.2.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:  
Sources of evidence:

IV.2.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions.

What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:  
Sources of evidence:

44. In your opinion is the directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:  
Sources of evidence:
45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
</table>

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
</table>

IV.2.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

| Response: | Sources of evidence: |
APPENDIX

INTERVIEW NOTES
V. INTERVIEW NOTES

V.1 Interviews
Table V.1 provides a list of the organisations interviewed. In the next section the interview notes are presented.

Table V.1 Record of Organisations Interviewed

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Appendix Section</th>
<th>Interview Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgaria</td>
<td>Ministry of Labour and Social Policy</td>
<td>Regulator</td>
<td>V.1</td>
<td>N/A</td>
<td>Written response to the semi-structured interview set was received via email. Actual interview session was not conducted.</td>
</tr>
<tr>
<td>Cyprus</td>
<td>Department of Labour Inspection</td>
<td>Regulator</td>
<td>V.2</td>
<td>11th June 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nobel Energy</td>
<td>Industry</td>
<td>V.4</td>
<td>12th July 2012</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>Danish Energy Agency, Offshore Safety Unit &amp; Danish Working Environment Authority</td>
<td>Regulator</td>
<td>V.5</td>
<td>22nd May 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maersk Drilling</td>
<td>Industry</td>
<td>V.6</td>
<td>23rd May 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dansk Metal</td>
<td>Union</td>
<td>V.7</td>
<td>23rd May 2012</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>Ministère de l’Ecologie, du Développement Durable, de l’Energie</td>
<td>Regulator</td>
<td>V.8</td>
<td>15th June 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>Industry</td>
<td>V.9</td>
<td>15th June 2012</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>State authority for Mining, Energy and Geology</td>
<td>Regulators</td>
<td>V10</td>
<td>30th August 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Association of German Oil and Gas Producers</td>
<td>Industry</td>
<td>V.11</td>
<td>29th August 2012</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>Health and Safety Authority (HSE) and Committee for energy Regulation (CER)</td>
<td>Regulators</td>
<td>V.12</td>
<td>30th April 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSE Kinsale Energy Ltd</td>
<td>Industry</td>
<td>V.13</td>
<td>30th April 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trade Association and Shell</td>
<td>Industry</td>
<td>V.14</td>
<td>1st May 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Service Industrial Professional and Technical Union (SIPT) Irish Congress of Trade Unions</td>
<td>Union</td>
<td>V.15</td>
<td>1st May 2012</td>
<td></td>
</tr>
</tbody>
</table>
## MANAGING RISK

### Country

<table>
<thead>
<tr>
<th>Country</th>
<th>Organisation</th>
<th>Organisation Type</th>
<th>Appendix Section</th>
<th>Interview Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Italy</td>
<td>Ministry of Economic Development (UNMIG) Assomineraria</td>
<td>Regulator</td>
<td>V.16</td>
<td>18th June 2012</td>
<td>Note that the stakeholders from Italy chose to have an integrated set of notes covering the conversations in the 3 meetings.</td>
</tr>
<tr>
<td></td>
<td>Eni</td>
<td>Industry</td>
<td></td>
<td>18th June 2012</td>
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<td></td>
<td>Enel</td>
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<td>Edison</td>
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<td>Shell</td>
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<td>Medoilgas Italia</td>
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<tr>
<td></td>
<td>Union Representative</td>
<td>Union</td>
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<td>18th June 2012</td>
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<td></td>
<td>NOGEPHA</td>
<td>Industry</td>
<td>V.18</td>
<td>3rd May 2012</td>
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<tr>
<td></td>
<td>Nautilus International and FNV Bondgenoten</td>
<td>Union</td>
<td>V.19</td>
<td>8th May 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Stichting De Noordze</td>
<td>NGO</td>
<td>V.20</td>
<td>8th May 2012</td>
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</tr>
<tr>
<td>Norway</td>
<td>Petroleum Safety Authority</td>
<td>Regulator</td>
<td>V.21</td>
<td>16th April 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OLF – the Norwegian Oil Industry Association</td>
<td>Industry</td>
<td>V.22</td>
<td>17th April 2012</td>
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<tr>
<td></td>
<td>SAFE and Industri Energi</td>
<td>Union</td>
<td>V.23</td>
<td>16th April 2012</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>Ministry of Economy, Ministry of the Environment, District Mining Office in Warsaw, Nadinspektor Pracy Polish Labour Inspection, State Mining Authority</td>
<td>Regulator</td>
<td>V.24</td>
<td>25th May 2012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>LOTOS Petrobaltic S.A.</td>
<td>Industry</td>
<td>V.25</td>
<td>2nd July 2012</td>
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</tr>
<tr>
<td></td>
<td>Talisman</td>
<td>Industry</td>
<td>V.26</td>
<td>24th May 2012</td>
<td></td>
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<tr>
<td></td>
<td>PGNIG</td>
<td>Industry</td>
<td>V.27</td>
<td>24th May 2012</td>
<td></td>
</tr>
<tr>
<td>Romania</td>
<td>MMPFPS and RIG and GSP</td>
<td>Regulator</td>
<td>V.28</td>
<td>31st May 2012</td>
<td>Participated in the same meeting as the Regulators</td>
</tr>
<tr>
<td></td>
<td>Petrom</td>
<td>Industry</td>
<td>V.29</td>
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<td></td>
<td>ExxonMobil</td>
<td>Industry</td>
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<td></td>
<td>Union</td>
<td>V.28</td>
<td>31st May 2012</td>
<td></td>
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<tr>
<td>United Kingdom</td>
<td>Health and Safety Executive</td>
<td>Regulator</td>
<td>V.31</td>
<td>23rd March 2012</td>
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<tr>
<td></td>
<td>Oil and Gas UK</td>
<td>Industry</td>
<td>V.32</td>
<td>29th March 2012</td>
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<tr>
<td></td>
<td>Unite and RMT</td>
<td>Union</td>
<td>V.33</td>
<td>27th April 2012</td>
<td></td>
</tr>
</tbody>
</table>
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling
V.1. NOTES FROM INTERVIEW WITH:

Ministry of Economy, Energy and Tourism of Republic of Bulgaria

from

Bulgaria
V.1.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Ministry of Economy, Energy and Tourism of Republic of Bulgaria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
</tr>
<tr>
<td>EU/EEA country/counts in which your organisation operates:</td>
<td>Bulgaria</td>
</tr>
</tbody>
</table>

V.1.2 Response to Questions

The question set was used as a general framework guidance document to inform the scope of the interview. The questions were not answered as outlined but rather an open ended approach was adopted. For this reason the discussions are presented in a different format to those of other interviews.

The following notes summarises the interview discussions with the Bulgarian authorities and answers where limited to the first five questions only:

NB The following bullet points have been provided as responses to the first six questions of the interview questionnaire.

- Drilling operations for searching and exploration of oil and gas in Bulgaria are carried out both onshore and offshore in the continental shelf of Black sea. Further exploration and drilling for hydrocarbons in the deep water are planned to be carried out in the near future, but not earlier than 2015 and these will include no more than 1-2 drilling operations.

- All the operations (including searching, exploration and drilling) in Bulgaria are carried out only by private sector companies and public-sector bodies are not involved.

- For the last 5 years in the country have been registered 8 onshore and 4 offshore drilling operations. Onshore ones were carried out by companies as follows: Onshore drilling: a Bulgarian company (3 activities), 3 EU companies (4 activities) and a non-EU company (1 activity); Offshore drilling: 2 EU companies (3 activities) and a non-EU company (1 activity).

- It is a strict requirement that the investors must select contract companies after an international competition. The profiles of these companies must be consistent with the best practices in the industry. Drilling operations must be carried out in accordance to pre-approved technical projects, which must include chapters regarding Environmental and Health and Safety risks as well as Emergency plans.

- According to Bulgarian Labour Codex (399:1) the National Labour Inspection is the responsible controlling body in the field of Health and Safety.

V.1.3 Attached Information

No further information.
V.2. NOTES FROM INTERVIEW WITH:

Regulator
Department of Labour Inspection

from

Cyprus
V.2.1 Demographic Questions

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<thead>
<tr>
<th>Organisation:</th>
<th>Department of Labour Inspection</th>
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<td>Stakeholder type:</td>
<td>Regulator</td>
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<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<td>EU/EEA country/county in which your organisation operates:</td>
<td>Cyprus</td>
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V.2.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response:

   a. Similar legal system to the UK. “Implemented under an “Umbrella” Framework law as a regulation to introduce EU requirements. SEE 4TH PARAGRAPH

   The minimum Requirements for Safety and Health at Work [(Extractive Industries through Drilling) Regulations of 2002 (P.I. 274/2002)] is the Cypriot Relevant Legislation which has transposed to Cypriot Legislation all the provision of Drilling Directive 92/91/EEC. The P.I. 274/2002 is a single piece of legislation that has been introduced under the main framework legislation which is the Safety and Health at Work Laws of 1996-2011 (SHW Laws 1996-2011).

   The framework legislation (SHW Laws 1996-2011) is providing for the introduction of secondary legislation in the form of Regulations. This is why it has been used for transposing to Cypriot Legislation all the EU Acquis (Directives, Decisions and Recommendations) concerning safety and health at work.

   The framework legislation (SHW Laws 1996-2011) is imposing obligations to employers, employees, self-employed persons and owners of premises. Therefore the Relevant Legislation is covering operators, subcontractors, maritime workers, divers, regulators and emergency responders provided that these persons and falling under the definition of employers, self-employed persons, employees or owners of premises. However, there are not any specific provisions in the Relevant Legislation concerning maritime workers, divers, regulators or emergency responders as the provisions of this legislation contains almost exclusively the provisions of the Drilling Directive.

   The framework legislation (SHW Laws 1996-2011) is also applicable to the Republic of Cyprus as an employer. However, based on the EU framework (mother) Directive 89/391/EEC, for the improvement in safety and health of workers at work, the SHW Laws 1996-2011 exclude from their scope certain specific public activities, such as those carried out by the armed forces, the police and emergency services, which may conflict with the provisions of this legislation.

   Sources of evidence:
Attachment A is giving a list of the Safety and Health at Work Legislation in Cyprus (both harmonised and national) and other legislation enforced by the Department of Labour Inspection (DLI). All this legislation is available on DLI website. The website has also an unofficial English translation of the framework legislation (SHW 1996-2011).

b. Based on the interpretation of the Attorney General of the Republic of Cyprus and according to the Continental Shelf Law N 8/74 (makes all legislation applicable offshore for the rigs and 500m around in the economic zone, with the exception of sea going vessels) all Cypriot Legislation is applicable at a limited distance around and on any such installation placed in the continental shelf of Cyprus. Therefore the framework legislation (SHW Laws 1996-2011) and the Relevant Legislation P.I. 274/2002 are applicable to all activities at work on site (platform / installation placed in the continental shelf) and to all activities at a distance of 500m around this site. The Cypriot Legislation is not applicable to the activities of travelling to / from any offshore / facility / installation by any means of transport helicopter / boat. It is not specified in this legislation that it is applicable for works on vessel delivering to platform. Additionally in the framework legislation (SHW Laws 1996-2011) there is a specific exception and this legislation is not applicable to seagoing vessels. However onshore the framework legislation is applicable to all activities without exceptions.

c. The scope of the framework legislation (SHW Laws 1996-2011) is covering all phases of designing, construction, commissioning, operation and decommissioning of installations (offshore / onshore). This scope is also covering the activities of prospecting, exploration, production and the preparation of extracted minerals for sale.

The Relevant Legislation (P.I. 274/2002) is covering the provisions of Drilling Directive but not any additional provisions have been added for the previous mentioned activities. For example there is no reference to the construction phase of offshore platforms, however this would be designated a mobile construction site and under the Framework Directive.

Therefore we estimate that the Relevant Legislation is not applicable during towing activities and on work carried out on standby vessels, on vessels and on flying means such as helicopters when these means are at a distance of more than 500m from a platform.

d. There are not any specific requirements in the Cypriot Safety and Health at Work Legislation or in the Relevant Legislation (P.I. 274/2002) concerning the applicability of this legislation for new and emerging technologies. However, as these technologies are used or applied by workers from a platform these could be considered as work activities and therefore they are falling under the requirements of the existing Safety and Health at Work Legislation.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response:


We estimate that these two legislations are very effective and believe it is a good system supported by well educated people. According to these two legislations the employers are requested to have written risk assessments for all kind of risks. Also, according to P.I. 173/2002 the employers are obliged to implement a Safety Management System. The DLI is the competent Authority for the enforcement of all OSH Legislation. This Department is operating an inspection system according to the Labour Inspection Convention No 81 of the
b. Since the introduction of the Relevant Legislation (P.I. 274/2002) in Cyprus, in January 2003, its application was limited as few extractive activities through drilling were carried out. In Cyprus the mineral onshore extracting industries activities are limited only to extracting water and prospecting for water and in very rare cases prospecting for other minerals such as gold. Only last year (September 2011-December 2011) extracting drilling activities were carried out offshore during the drilling in one position.

Water is seen as a mineral and prospecting for gold (where extraction could be chemical via drilling and not including gold exploration activities) would also be covered by the directive. Extraction of gold through mining would be under Mining Directive.

On onshore drilling activities it is estimated that the Relevant Legislation is effective. The experience concerning the effectiveness of this legislation for offshore drilling is very limited as this legislation was applicable to only one case of prospecting for natural gas for a short period (September – December 2011) but we estimate that there is a need for improvement.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response:

The DLI is not in position to suggest any legal changes to national legislation or to Directive 92/91/EEC after the Deepwater Horizon accident because:

i. The investigation procedure of this accident and the outcome report of this investigation have not been officially communicated to DLI.

ii. As it has been mentioned in the reply of Question 2b there is very limited experience in Cyprus from the enforcement of the Relevant Legislation (P.I. 274/2002) in the field of offshore extracting activities.

Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:

Concerning the proposal of the Commission we estimate that an introduction of a directive, instead of a regulation, would be more adaptable and suitable to existing situation and legislation in each Member State. A directive is better as it is more flexible to get a better fit to legal and regulatory environment – e.g. the Health and safety differences between the 10 new member states has now nearly reached same level of protection based on H&S Directive. However Directive 92/91/EEC appears biased towards occupation accidents over Major Accident Hazards/Process Safety.

Furthermore we believe that there is an absolute need to separate clearly in the proposed legal instrument of the Commission the responsibilities of the different governmental Departments / Agencies involved on offshore activities. This is necessary in order to avoid confronting interests between Departments / Agencies dealing with energy issues or providing licenses for prospecting / exploring for hydrocarbons and other bodies that are responsible for workers safety and health of for environment issues.

Concerning the provisions of the proposed Regulation on emergency plans we believe that the operator should be responsible for the preparation and implementation of the internal
within this installation/premises, emergency plan. However, the responsibility for the preparation and implementation of an external emergency plan should be allocated to the competent Authority of the Member State. The provisions of the proposed Regulations also in some cases overlap with the provisions of the Drilling Directive. For example, the Drilling Directive is requesting a “Safety and Health” document for all risks and the proposed Regulation is also requesting a “Major Hazards Report”. What is the difference apart from the fact that the latter is also dealing with environmental risks. The overlapping will confuse duty holders and make less effective the competent enforcement authorities, while increasing the administrative burden. The proposed regulation is seen as comprising 20% on Licensing 70% on H&S and 10% on the Environment.

Generally happy with the application of REACH in Cyprus, but not really applicable 1:1 and do not see this as uniform across Europe.

Based on experience from SEVESO and emergency planning the following responsibilities are applicable

- Internal - employers
- External - State as the coordinator of all response organisations
- Onshore – Civil Defence lead
- Offshore – to be determined, probably the Maritime Department

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:

As it has been mentioned a foreign company (an employer) has recently carried out offshore drilling activities prospecting for natural gas. The DLI is a newcomer organisation involved in offshore enforcement of the Relevant Legislation. At the time there was no legal instrument to request the safety case for the first drilling, however this was made available for review. Based on our experience we believe that there is a great need for:


ii. Exchange experiences between inspectors / officers of offshore Competent Authorities of Member States which are supervising the enforcement of the Relevant Legislation in their country.

iii. Common inspection of offshore installations carried out by inspectors / officers of Competent Authorities for training.

Sources of evidence:

V.2.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?

d. Extent and plans for other “extraction through drilling activities”.
Response:

a. Onshore drilling activities in Cyprus are related mostly to the prospecting and the extraction of water. These activities are expected to continue in the future as the issue of sufficient water supply is a major one for Cyprus. As Cyprus has in the past certain minerals, such as copper and gold, it is estimated that onshore prospecting and possible extraction of minerals will be an on-going process.

The sea in the south of Cyprus, been a part of Cyprus Continental Shelf, has been divided into plots. Last year, after the first prospecting drilling in one of these plots and the finding of sufficient stocks of natural gas, the Government of Cyprus is in the process to allocate the rest of these plots to interested companies for prospecting and extracting hydrocarbons. Therefore it is estimated that all kind of offshore drilling activities will be increasing quite rapidly in the next years.

b. We are not in position to provide more specific data.
c. We are not in position to provide more specific data.
d. We are not in position to provide more specific data.

Sources of evidence:
See Energy Service, Ministry of Commerce, Industry and Tourism

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

a. For the time being there was only one offshore drilling for prospecting of hydrocarbons. Onshore in 2010, 1380 permits have been granted and 2087 in 2011 for drilling wells for water.

90% of drilling activities are for water onshore (typically 2-3 days on one site, small companies (2-3 people), frequently self-employed) so cannot ask for too much and difficult to apply the directive to this area.

b. For the moment in Cyprus there is neither oil nor gas production onshore or offshore.

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

The Geological Survey Department (GSD) is a public sector governmental organisation which is carrying out drilling and developing production wells to meet the water needs. This Department is drilling about 100-150 boreholes per year and a part of these boreholes is used in meeting Cyprus water needs. The GSD dispose 9 (nine) field working drilling groups. The Water Development Department is providing the permits to private persons willing to drill boreholes for water. This Department has authorised 80 persons (legal or natural) to carry out these activities.

The same requirements for the GSD (Government Agency) apply as for companies that drill for water which are made up of both public and private companies.

Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:
   a. The notification to DLI of accidents at work is now regulated by the Safety and Health at Work (Accidents and Dangerous Occurrences Notification) Regulations 2007 (P.I. 531/2007). Before 2009 these notifications were regulated by the Accidents and Occupational Diseases (Notification) Law which was repealed after the introduction of P.I. 531/2007. The DLI is the Competent Authority for the enforcement of this legislation.
   b. Fatal accidents have not been notified, according to the previous mentioned legislation, during the last 10 years.
   c. Very few injuries from accidents at work activities concerning drilling have been notified to DLI in the most recent years. During the first offshore drilling activity of 2011, which went on for about 3 months, 3 accidents have been occurred (1 well offshore). The 2 of these accidents were related to intoxication from hydrogen sulphite (tank storage in high temperature environment, now treated more quickly). Attachment C gives the number of persons employed in the onshore no drilling extractive activities (mines and quarries) and the number of accidents. These data are compared on the same chart with national pictures for notified work accidents and employed persons (3 days away from “normal work” activity). Accidents and dangerous occurrences are also required to be reported to the relevant authority.

Sources of evidence:
Attachment C Accident Frequencies
&
Attachment E Accident Trends

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:
Onshore drilling activities are related almost exclusively with water. The accidents and near misses which occurred during these activities were related to machinery and equipment used to drill the wells or to pipes and pumps used for pumping water.

As recent entrants into offshore drilling, previous incidents have not required Cyprus to do anything differently. Effectively joining the EU (along with points raised later) has provided the most input.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:
The Safety and Health at Work (Occupational Diseases Notification) Regulations of 2007 (P.I. 530/2007) and the previous Accident and Occupational Diseases (Notification) Law (which was repealed in 2007 after the introduction of the previous Regulations) provide for

Sources of evidence:
V.2.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

   a. The Relevant Legislation (P.I. 274/2002) has been introduced in Cyprus and it includes literally all the provisions of Drilling Directive 92/91/EEC. This legislation has been issued under the Safety and Health at Work Laws of 1996-2011 which is a framework legislation giving the possibility to introduce secondary legislation on specific topics.

   b. & c So far, the only additional to the Drilling Directive provisions, which have been added to the Relevant Legislation in order to improve the protection of persons at work, concern issues related to welfare and health of workers. These additional provisions have been added in the Annex of the Regulations. The additional provisions concern the protection from thermal load within premises (Now includes guidance working outside & thermal load including humidity), the ventilation of enclosed places, normal and emergency lighting, fire protection of buildings, stairs, floors and corridors, storing of flammable substances, extraction by local ventilation of dangerous fumes, suitability of floors, roofs, doors, rest rooms, showers, toilets (wc), washbasins and windows. Also, as all the Safety and Health at Work Legislation is applicable to drilling (offshore or onshore activities), the Management of Safety and Health Issues at Work Regulations (P.I. 173/2002) are also applicable to these activities. This P.I. 173/2002 is imposing the obligation to any employer (therefore also to any employer engaged in drilling activities) to have a safety management system. Finally, it is mentioned again that the Relevant Legislation is also applicable to self-employed persons.

   The requirements Cyprus has included in the annexes on welfare and health, draws on experience from other industries such as mining. There are prescriptive requirements aimed to help the employer take measures in the absence of guidance.

Sources of evidence:
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

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<th>Response:</th>
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<tr>
<td>The Relevant Legislation (P.I. 274/2002) is a single independent piece of legislation classified as secondary legislation and has been introduced under the framework legislation (SHW Laws of 1996-2011). However, P.I. 274/2002 is not a stand-alone piece of legislation (part of a Framework) as for example the powers of inspectors enforcing this legislation and the penalties are included in the framework legislation.</td>
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14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

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<tr>
<td>The definition of a &quot;major accident&quot; as it has been included in the questionnaire is not used in Cypriot SHW Legislation. However, the Cypriot Legislation (P.I. 530/2007 and P.I. 531/2007) provides for the notification of fatal / or no fatal accidents, occupational diseases and dangerous occurrences such as fires, explosions and collapse of structures. In our opinion Cypriot Legislation focus on the protection of the occupational safety and health of all persons at work. Also this legislation provides for the protection of these persons from all risks which may affect them.</td>
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15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

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<tr>
<td>The Cypriot OSH Legislation is mainly a goal setting legislation where the person having the legal obligation has to take all the necessary, suitable and appropriate measures, according to the case, to achieve a result. For instance the employer who operates an offshore installation needs to evaluate the risks from a borehole and take all the measures to protect his workers. These measures (e.g. means, methods of work, equipment, persons etc.) are not describe in the legislation. The Cypriot OSH Legislation avoids the use of perspective legal provisions as there is a possibility that certain requirements are not included in the legislation and in this way the duty holder would not be obliged to take the corresponding measures. However in certain cases, e.g. the Safety and Health [Minimum Requirements for Temporary and Mobile Construction Sites (P.I. 172/2002)], more detail technical requirements have been added in the Annexes of the Regulations in order to achieve a better protection. In Cyprus you currently can make reference to approved code of practices to demonstrate done what is reasonably practicable if there is not any code, the responsibility is on the employer to demonstrate this. Very few codes are available and therefore there is a need to put requirements e.g. guard raid heights in the annex of regulations. As the Cypriot Legislation is more goal setting we believe that there is a need to introduce more guidelines to help all duty holders involved in drilling activities to achieve better results. In the case of the Relevant Legislation (P.I. 274/2002) not any additional goal setting requirements have been introduced concerning or prescriptive requirements apart few additional requirements that have been added in the Annex as it has been explained in the reply of Question 12.</td>
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16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

A specific Cypriot OSH Legislation [The Safety Committees at Work Regulations of 1997 (P.I. 134/1997)] provides for the election/appointment from the workers of safety representatives and the operation of safety committees. This P.I. is also applicable on drilling activities of any employer and it helps to develop a safety culture amongst the workforce. Each company has an obligation to train the appointed safety representative at the beginning of the appointment and also for on-going training. Minimum training hour required is also currently under review. There is more standard obligation for everyday employees. Cyprus is yet to set requirements (based on risk assessment) requirements for training of inspectors.

Legislation for safety representatives and committees is worker and not union driven. If required there is a mechanism where employees can report anonymously to DLI or through the unions any concerns of unsafe situations etc.

For companies >200 employees there is a requirement for a full time Safety Officer. For onshore drilling there are currently no companies big enough to require this.

The framework legislation (SHW Laws 1996-2011) provides for the operation of the Pancyprian Safety and Health Council. This is a tripartite body with representatives from the Government and the Employers’ and Workers’ Organisations. The functions of this Council include the development, propagation and maintenance of activities for the improvement of the safety and health of workers. The activities of the Council include suggestions for new legislations or guidelines, programs for training in OSH issues, follow up of the national strategy on OSH etc. This Council in not a specific one for the drilling activities but is dealing with any aspect of safety and health in all activities. The Council meets twice a year and has technical committees working under the Council (e.g. working group on thermal load). The Council follows up on H&S strategy of CYPRUS and discusses accidents including statistics, lessons learnt and presentations.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:

So far offshore drilling for hydrocarbons was carried out only by a private company. Offshore drilling mainly for water is done by both private companies and the Geological Survey Department (DGS) which is under the direct control of the Ministry of Agriculture, Natural Resources and Environment. The experience concerning the first offshore drilling activity in south Cypriot Continental Shelf from an offshore private foreign company is that this company has showed so far a good management system.

The onshore drilling private operators are mostly self-employed persons or very small private companies / employers which / who do not dispose safety management systems. The DGS has not yet developed a suitable and appropriate safety management system.

Sources of evidence:
18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:
   a. The DLI has produced many publications, mostly in Greek with few in English such as leaflets, booklets, guides and code of practices dealing with safety and health at work. A list of OSH publications is given in Attachment D. (All publications are available on DLI website). These publications do not include any one concerning specifically drilling activities. There is a lack of guidance on the application of the drilling directive.
   b. & c The codes of practice are used to help the duty holders fulfil their obligations. These Codes are issued under the framework legislation SHW Laws 1996-2011 after discussion and usually agreement of all social partners representative Organisations and the Government, e.g. Government, Union, Tripartite Council.

Sources of evidence:

V.2.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:
   a. The Cypriot Relevant Legislation does not give any additional details concerning the assessment and the management of special sources of hazards associated with normal and critical situations. We have very limited practical experience in DLI about this issue. However, OSH Legislation is requesting the employer to assess all risks and it is up to this person to prove that is carrying out properly this assessment in all phases of his activities. Therefore the employer is required to assess all risks so they would all be covered including “special sources” of hazard.
      According to OSH Legislation the employer must assess all the risks for all his employees and for any other third person (employee, self-employed or other) who may be affected by his working activities.
   b. Neither the Relevant Legislation nor the other OSH Legislation provides specifically for major accidents hazards.
   c. There is not any interpretation in the legislation of “normal” and “critical” situations (Annex, Part C, 1.1) of Drilling Directive. Normally in Cyprus an interpretation which is not prescribed in the legislation is given only by the Court if and when there is a case law.
20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

The drilling activities to which the Relevant Legislation (P.I. 274/2002) is applicable are not prescribed in any Cypriot OSH Legislation. However, as any work activity on site is covered by this legislation it is concluded that all parts of the drilling process are falling under this legislation. However it is repeated that the movement/towing of the drilling platform is not falling under OSH Legislation. Therefore when the installation stops its transit it would fall under the applicable drilling legislation and therefore the safety case would be expected to start when the installation positions itself to when it leaves, however it would be beneficial if the Directive was clear on this issue to better avoid misunderstanding of jurisdiction.

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

The Relevant Legislation (P.I. 274/2002) is applicable only to mineral-extracting industries as these industries are defined in the Drilling Directive 92/91/EEC. It is not clearly specified neither in the Relevant Legislation nor in this directive that this legislation is applicable to stand by vessels, during the construction of a site or during the decommissioning phase etc. However, as it was explain in the replies of Questions 1 and 20 we are of the opinion that all drilling and production activities including work for the construction of offshore installations and decommissioning of sites are falling under Cypriot OSH Legislation.

All activities within 500m would be included and would expect the safety case to cover all stages of construction and decommissioning on site, including to beyond 500m. Clarification on standby vessels for applicability of the frame directive & 92/91 would be appreciated, however currently these would not be covered. Other vessels performing maintenance or gas storage for example would be covered.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

There are not any specific references in the Relevant Legislation concerning drilling activities related to shale gas drilling (fracking) or shale oil production.

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

There are not any specific references in the Relevant Legislation concerning underground storage of materials (e.g. unconventional gas storage, CO₂ capture and storage).

Sources of evidence:
24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

The Relevant Legislation uses the term workplace as it has been included in the Drilling Directive. There is not any additional interpretation in P.I. 274/2002. However, the framework legislation (SHW Laws 1996-2011), which applies to all drilling activities, has a specific interpretation of the term workplace (Article 2). According to this interpretation a workplace “includes any place airplane, ground, underground, above sea, under sea where there are, or there may be at any time persons at work”. Therefore our interpretation is that divers working at a distance of 500m around the platform are falling under the provisions of OSH Legislation and P.I. 274/2002. Also the transportation of workers (via helicopter) is falling under the provisions of SHW Laws 1996-2011 and that all safety and health requirements of OSH Legislation are applicable provided that these transported workers are in the area specified by the Continental Shelf Law N 8/74. See our reply to Question 1.

Sources of evidence:

Some confusion as the directive has a definition but the Framework law has a more broad definition. Activities generally within the 500m zone will be covered while those outside of this area will be covered by other instruments and not the drilling directive.

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

There is not a specific reference to the term “employer” in the Relevant Legislation. This term is defined in Article 2 of the SHW Laws of 1996-2011 as following: “Employer means any person who is responsible for the workplace, the premises, business and / or establishment in which the employee is employed or was employed. It is provided that employer includes a person who has no other employed person, but conducts economic activity or manages the business for profit or not”. Therefore we believe that the whole network of duty-holders, licensees, owners, operators and subcontractors in the offshore industry has obligation under OSH Legislation.

The ultimate responsibility for health and safety lies with the operator in control of the site, processes, personnel and sub-contractors who also have a health and safety document (Cypriot law also includes 3rd parties). There is a cascade of responsibilities from licensee, operator and sub-contractor as all have obligations as employers. The Licensee has obligations, but this is not clearly stated in regulation and will need to be proven in court that they have done everything reasonably practical.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:

   a. There is not any specific definition of “major” changes in the Relevant Legislation, that is required to trigger a revision of the safety and health document.
   b. This criterion has not been discussed with the stakeholders so far.

As a new industry in Cyprus with no experience of major changes and no guidance assisting
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

with the, the Directive was transposed directly. Therefore yet to experience this in practice.

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
The aspects of safety work (such as risk assessment, safety reports, verification activities and reports, etc.) are not subject to any quality control (QC) and quality assurance (QA).

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
As only one case of offshore drilling has been carried out the information included in the safety and health document has not been so far subjected to any quality control by the DLI or any other independent party.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
The Relevant Legislation is not providing for the safety and health of workers engaged in the rescue and recovery operations. These activities are not under the scope of the SHW Laws 1996-2011. See also our reply in Question 1. However, the employers of those persons engaged in such activities are obliged by this legislation to safeguard wherever possible the safety and health of their employees. For emergency workers the obligations are on the employer if they are responding to an incident not under 92/91 e.g. fire / pilots of helicopters.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
Concerning the gender equality and handicapped workers the Relevant Legislation has the same requirements as those included in the Drilling Directive. It is considered neutral as only 1 provision in the annex regarding gender discrimination: however selection of personnel to work offshore is about not putting a person at risk e.g. pregnant women.
V.2.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:
The Relevant Legislation and all OSH Cypriot Legislation concerning all kinds of drilling activities are enforced by the DLI. Enforcement is the same for every employer under the legal Framework.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:
Drilling activities were and continue to be limited in Cyprus. We consider that the enforcement of the Relevant Legislation concerning onshore activities is sufficient. However since last year we are facing challenges and different difficulties for the enforcement of the Relevant Legislation on offshore activities and installations. This is due to the fact that we have not any experience in the past for such installations and activities. It is the first time that the Cypriot OSH Legislation should be applied on offshore installations and activities and this has obviously certain particularities and shortages.

It seems that the existing OSH Legislation is not clearly covering the whole spectrum of activities which are carried out in relation to drilling. For example rig by boat, towing of platforms, flying at a distance of more than 500m from a platform with helicopters to/from an offshore platform and work on standby vessels are excluded activities. Also there is a need to improve the existing legislation in order to impose obligations to all persons involved such as owners of exploration permits, users or owners of wells, drillers, owners/users of pipelines, owners/users of platforms etc. Certainly there is a need to allocate more resources (trained personnel and means) for the enforcement of OSH Legislation.

Additionally there is a need to introduce more guidance for the enforcement of the legislation and to work very closely with all parties involved.

In fact there is a need to introduce a more holistic approach to better protect people working on offshore activities.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
The Government of Cyprus is the employer of all regulators/enforcement officers/inspectors while been offshore or during transport to/from any offshore installations. Therefore the Government of Cyprus has all the legal obligations of an employer to protect his employees and to implement all the provisions of OSH Legislation where this legislation is applicable. As it was mentioned in the reply of Question 1 OSH Legislation is not applicable to certain activities which include the operations of fire service and the emergency services.

In case of any work accident the Government of Cyprus remains liable to pay also civil damages to injured persons and to their families, in case of a fatal or not injury.

The operator of the installation continues to have responsibility for the site and persons in...
### V.2.7 Effectiveness

#### 34. What impact does the regulatory approach in your country have on safety and health protection?

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<tr>
<td>During the last 10 years there was a continuous improvement of OSH levels in Cyprus. This observed in the reduction of the frequency of Accidents (Attachment E) and from the surveys (national or European) which were carried out [e.g. European Survey of Enterprises on New and Emerging Risks (ESENER) of 2010 and the pan-European Health and Safety Survey (carried every year) by the European Agency for Safety and Health at Work]. The regulatory approach is seen as driving recent improvements.</td>
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#### 35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

| a. How successful (in your opinion) is the implementation of the relevant legislation in your country? |
| b. What (if any) objective measures are available to show its effectiveness? |
| c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe). |

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<td>a. &amp; b  See the replies to Question 2.</td>
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<td>b. The effectiveness in promoting safety and health for the enforcement of Relevant Legislation is estimated to 7 on a scale of 10.</td>
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#### 36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

| a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive? |
| b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect). |
| c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect). |

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<th>Response:</th>
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<tr>
<td>a. Our experience from the enforcement of the Relevant Legislation on offshore activities is very limited. As the Relevant Legislation is containing all the provisions of the Drilling Directive it has the strengths and weaknesses of this legal act. We believe that the main reason that we face difficulties to enforce this legislation is related to weaknesses and shortages of the Drilling Directive.</td>
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<td>From our limited experience, after the offshore application of the Relevant Legislation, we believe that the existing Drilling Directive 92/91/EEC needs to be amended as to be more suitable and adequate to cover more precisely the whole spectrum of offshore activities to protect all persons at work involved in such activities and to impose more precise obligations to all entities involved in such activities.</td>
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<td>Amending or Redrafting the Drilling Directive based on the experiences that has been collected after:</td>
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The offshore enforcement of this directive during the last 20 years.
Accidents and near misses that have been occurred and investigated.
Considering better legal instruments used in certain Member States.
Also there should be a clearer obligation in the directive of all duty holders to be submitted to a third and independent party regular control.

Some proposed legislation could be included into the drilling directive or elsewhere. Clearer interconnectivity of activities and more detailed annexes could be included to assist new comers in the industry. 3rd party verification is seen as a good way to help “new / inexperienced” regulator of offshore oil and gas.

After 20 years there are opportunities in improving the drilling directive especially considering the maturity of the industry in the UK and Norway which are still undergoing changes.

b. For generally covering all OSH issues 8.

c. We are not in position to rate the effectiveness of the Relevant Legislation in Europe as we do not dispose reliable data or surveys from other countries apart from UK. The DLI very recently has obtained, after a very short visit to UK Health and Safety Executive (HSE) premises in Aberdeen, limited information about the corresponding UK legislation and system on offshore drilling activities. From this information it seems that UK legislation has more analytical and precise requirements in certain cases than the corresponding Cypriot Relevant Legislation. This is possibly due to the fact that in this country the legislation and the whole system, for the protection of workers engaged on offshore activities, have been gradually improved based on experiences, accidents and near misses over a period of more than 50 years. It was also clear that the British system of protection is performing very well.

37. Please mention any other relevant issues from the practical application of the relevant legislation:

a. Any notable difficulties in the practical application?

b. Any unexpected positive effects?

c. Any unintended (or unexpected) negative effects?

d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?

e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

a. Drilling Directive 92/91/EEC is a daughter directive of mother / framework Directive 89/391/EEC. As Directive 89/391/EEC has a restriction on the scope of its application for certain activities of the public sector then there is a difficulty to implement the Drilling Directive for fire and emergency services personnel.

• The application of Drilling Directive, as it is now, in not covering clearly and precisely the protection of workers engaged in activities related to the installation and use of pipelines connecting offshore installations with other offshore or onshore installations for hydrocarbons transportation or storage. This is included in the proposed regulation.

• Drilling Directive is not imposing any obligation to the operator / employer to send to the Competent Authority a prior notice before starting drilling for or extracting hydrocarbons.

• The operator, according to Drilling Directive is not obliged to submit the safety

Sources of evidence:
and health document to the Competent Authority and have any comments of such Authority before starting his operations (e.g. drilling / extraction).

- The Annex of the Drilling Directive should be develop to include more details and to avoid ambiguities (e.g. in the case of escape and emergency routes, for the protection from explosions and fires, for persons in charge on platform, for safety shut off valves, etc.).

b. Not any unexpected positive effect has been identified so far.

c. Certain activities related, directly or indirectly, to the main drilling activity are not covered by the directive in a way to oblige duty holders to take measures (e.g. during, transportation of equipment and personnel by boats and or helicopters, towing of platforms / installations / tanks / pipes, positioning of underwater valves and pipelines, work in standby vessels (used as workstations, for accommodation or for uploading hydrocarbons), anchoring or positioning of vessels delivering goods / workers on platforms.
- Jurisdiction conflicts up to the application or not of EU health and safety directives on vessels (rescue / fire fighting boats, transportation vessels for goods / hydrocarbons / workers).

d. The enforcement of Drilling Directive on SMEs and self-employed is very difficult. In certain cases very small SMEs or self-employed are almost unable to implement certain requirements of the directive taking into consideration their size or their capacity. In other cases drilling activities are carried out only for few (2-3) days (e.g. drilling boreholes for water). In these cases many requirements of the directive are inapplicable / unsuitable / inappropriate. We estimate that the Drilling Directive has been formulated for being applied to medium / big employers.

Obviously particularly risks related to the growing age of workforce, to the turnover of workers and to differences between male and female workers should be assessed by the employer. This is a series of horizontal risks which could be mentioned in a future amendment of Drilling Directive but they are, according to our opinion already covered under the provisions of framework Directive 89/391/EEC. This should be covered in the operator’s risk assessment (& hence safety case) and is not specific to the directive.

V.2.8 Evaluation

38. Are changes needed in the relevant legislation in your country?

a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?

b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?

d. Otherwise, what changes are needed?

Response:

a. We estimate that workers engaged in onshore drilling activities are adequately protected not only because of the implementation of Drilling Directive but because of the enforcement of all OSH Legislation (Transposed from EU Acquis and National).

In the case of workers engaged in offshore drilling activities we estimate that there is a need for improvement because Drilling Directive and OSH EU Acquis, and therefore the transposed Cypriot Legislation, have weaknesses and shortages as these have been analysed in the replies of Questions 1, 20, 21, 24, 27, 29, 36 and 37.

We believe that the introduction of the term of “major accident” in the requirements of
Relevant Legislation will help to improve the safety and health standards. The proposed regulation has slightly different definition to that used here (i.e. questionnaire & proposed regulation) and therefore a definitive definition would be beneficial.

b. We estimate that this is a need to further improve the minimum safety and health requirements of the Relevant Legislation. More details are provided to our replies to Question 1, 20, 21, 24, 27, 29, 36 and 37.

c. Not any additional comments.

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
   a. From our experience in Cyprus and UK we estimate that there is a need to change/amend the Drilling Directive.
   b. We are not fully aware of the details of Deepwater Horizon investigation.
   c. Drilling Directive needs amendments to overcome the shortages and weaknesses that have been already mentioned in order to become sufficiently adequate and appropriate. Refer to our replies to Questions 1, 20, 21, 24, 27, 29, 36 and 37.
   d. We do not dispose enough information to compare how the Drilling Directive is interpreted throughout Europe. We believe that there is a great need to develop guides, guidelines and codes of practice to help and support the implementation of the Drilling Directive and to assist in guiding regulators.
   e. There are gaps and these have been already mentioned in the replies of previous Questions (1, 20, 21, 24, 27, 29, 36, and 37).
   f. As the negotiations for the new offshore Regulation is on the way we believe that there is a need to re-examine the adequacy, compatibility and continuity of the Drilling Directive and the new Regulation. We estimate that there is a need for more improvement and clarity to avoid conflicts and overlapping.
   g. Take all the necessary steps to arrange the participation of all EU countries, having offshore activities, to a specific working group or committee. This will allow discussions of practical implementation issues, the resolution of technical problems and the organisation of pan-European campaigns. Obviously this will also facilitate a better implementation of the Drilling Directive throughout Europe and help to achieve the same levels across Europe.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

| a. | The cumulative effect will be the improvement of safety and health levels of all persons working in relation to drilling activities. |
| b. | If these improvements are materialised the improvement would be 9. |
| c. | It is very difficult for us to estimate the improvement at EU level as our experience for the situation concerning the enforcement of the Drilling Directive in other member states is very limited and is almost nil. |

Sources of evidence:

V.2.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?

a. Please outline the administrative burden implementing the directive in your country.

b. What (if any) objective measures are available to evaluate the burden?

c. Are any changes needed to minimise it?

Response:

| a. | There is not any clear estimation of administrative burden for the development and enforcement of the Drilling Directive in Cyprus. For the time being very few officers and inspectors of DLI occasionally are dealing with the Drilling Directive and the Relevant Legislation. This is expected to increase in the future but the effort and input required considered reasonable for the benefits gained. |
| b. | The officers and inspectors very rarely carry out inspections for onshore drilling activities. In few cases these persons have investigated serious of fatal related to such activities accidents. There was only one visit of the Director of DLI to the offshore platform last year. |
| c. | As offshore drilling activities are going to increase over the next years in Cyprus waters it is estimated that the administrative burden will greatly increase but considered proportionate. |

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?

a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.

b. How can the burden be minimised?

c. Can existing systems cope with the extra requirements?

Response:

| a. | If the changes we have proposed are materialised the administrative cost will . |

Sources of evidence:
increase initially to cover the cost of measures to be implemented. But this is the benefit of having safer and healthier working conditions for workers. Based on the level of hazard on and offshore, for water drilling the current systems deemed sufficiency but seen as necessary and more important for offshore.

b. In long term the administrative burden will be reduced. Seen as necessary as more important for offshore

c. As our proposals concern only the offshore sector we estimate that the companies involved in such activities would be in position to cope.

V.2.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

We believe that the use of a directive instead of a regulation as a legal instrument would be much better as in this case each member state could adapt its legal system to the new / additional requirements. The use of a directive would also be better because the requirements proposed by the Commission concern various governmental Departments and Services.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

EU history has shown in the past that the introduction of directives even in cases of great discrepancies or differences was able to bridge slowly the gaps. Take the example of the 10 new EU members states which have joined the previous 15 member states in 2003 and after almost a decade the differences in OSH between old and new members have been minimised.

Implementation could be improved if the following measures are taken:

- There is an amendment of the Drilling Directive to eliminate weaknesses and shortages. This amendment could also add more clear and specific requirements in the Annex.
- There is a development by the Commission in cooperation with member states of Practical guides, guidelines and codes of practice.
- There is a standing committee / working group of all member states where drilling activities for hydrocarbons are carried out for organising common campaigns and
45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deepwater). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

There is a need to amend the Drilling Directive to cover also specific issues related to arctic areas, deepwater and hot working conditions (e.g. in south Europe). However it is considered generally ok for applicability to extreme conditions as it is applicable to all situations, however if modified the directive should also consider the Mediterranean. The annexes should also be developed to include more details, guidelines and codes of practice.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:

The experience in Cyprus is very limited to propose specific guidelines. However as far as we are aware relevant documents have been introduced in UK by the Health and Safety Executive and other bodies / organisations involved in drilling activities.

Sources of evidence:

V.2.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

Not any other comments.

Sources of evidence:

V.2.12 Attached Information

Attachment A: Legislation Enforced by the Department of Labour Inspection
Attachment B: Organisational Chart of the Department of Labour Inspection
Attachment C: Accident Frequencies
Attachment D: Leaflets
Attachment E: Accident Trend
Attachment A: Legislation Enforced by the Department of Labour Inspection
**LEGISLATION ENFORCED BY THE DEPARTMENT OF LABOUR INSPECTION**

**ΚΑΤΑΛΟΓΟΣ ΝΟΜΟΘΕΣΙΑΣ ΠΟΥ ΥΧΕΙΡΙΖΕΤΑΙ ΤΟ ΤΜΗΜΑ ΕΠΙΤΡΟΠΗΩΝ ΩΡΗΣΗΣ ΕΡΓΑΣΙΑΣ**

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<td>Κ.Δ.Π. 184/2002</td>
<td>The Safety and Health at work of workers with fixed-duration employment or temporary employment Regulations of 2002</td>
<td>P.I. 184/2002</td>
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Εξοπλισμός – Equipment

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The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling.
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PERIOD 2003 - 2011
(Accidents to employed persons during their work)
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Attachment D: Leaflets
MANAGING RISK

DEPARTMENT OF LABOUR INSPECTION

LEAFLETS

06/06/2012

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<td>Employees Representation - Consultation - (in Turkish)</td>
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<td>78</td>
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<td>Lighten the Load! Counteracting affections of the lower part of the spine in the Transport Sector</td>
<td>2008</td>
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<td>Lighten the Load! - General leaflet of the campaign</td>
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<td>82</td>
<td>Health, Working Environment and Safety: Training material for hairdressers</td>
<td>2008</td>
<td>A4 48</td>
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<td>Important aspects concerning the Safety, the Health and your</td>
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<td>Instructions on safe working in Truck Repair Workshops</td>
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<td>94</td>
<td>Protection from machinery - Obligations of those selling, renting or exhibiting machinery</td>
<td>2006</td>
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<td>95</td>
<td>Management of Safety and Health in the Metal Industry</td>
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<td>Management of Safety and Health in the Wood Working Industry</td>
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<td>97</td>
<td>Safety and Health in the Construction Sites - Questionnaire for the identification of unsafe conditions</td>
<td>2006</td>
<td>A4 26</td>
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<td>Management of Safety and Health in Agriculture</td>
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<td>101</td>
<td>Citizen contribution on the reduction of Atmospheric Pollution</td>
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<td>Basic Regulations of the Control of Atmospheric Pollution Law of 2002</td>
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<td>Management of Safety and Health in Hotels</td>
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<td>105</td>
<td>Chemical Substances at the workplace - Health Risks and Protective Measures</td>
<td>2005</td>
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<td>Safety at the construction sites - Risks from falls</td>
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<td>Citizens Rights Map</td>
<td>2004</td>
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<tr>
<td>108</td>
<td>Safety and Health in Welding</td>
<td>2003</td>
<td>A5  8</td>
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</table>
Attachment E: Accident Trend
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

APPENDIX V

TREND OF FREQUENCY INDEX - NO OF ACCIDENTS-NO OF EMPLOYEES
PERIOD 2003 - 2011

YEAR

YEAR

INCIDENCE RATE
(Decrease 2003-2011:24.8%
Decrease 2007-2011:11.2%)

No OF ACCIDENTSNote 1
(Decrease 2003 - 2011 :3.6%

No OF EMPLOYEES
(Increase 2003 - 2011: 28.2%)

Note 1: Number of accidents refer to accidents that occurred to employees during their work and reported to the Department of Labour Inspection.
V.3. NOTES FROM INTERVIEW WITH:

Regulator  
Energy Service, Ministry of Commerce, Industry and Tourism  
from  
Cyprus
V.3.1 Demographic Questions

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<td>Stakeholder type:</td>
<td>Regulator</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Cyprus</td>
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</table>

V.3.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: See response of the Department of Labour Inspection.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: See response of the Department of Labour Inspection.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: A possible change to the national legislation is the establishment of an unequivocal liability regime to cover clean-up cost that might arise as a result of a major incident.

   Also, the safety management plan that operator apply needs to be approved by the competent authority.

   Sources of evidence:
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:

The problem is that some provisions of the Directive 92/91/EEC are already covered by the proposed Regulation on safety of offshore oil and gas activities. Directive 92/91/EEC is very general and could benefit from categorisation of different types of drilling (e.g. water onshore vs Oil and Gas offshore). There is potential conflict between the Health & Safety document and the proposed Major Accident Hazard document. It is not seen as appropriate to have two documents and would like to have one report for Major Accident Hazards. Prefer one directive under DG Energy covering all areas.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:

It is necessary that the drilling activities to be classified and separate guidelines shall be followed in each category.

Sources of evidence:

V.3.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d.Extent and plans for other “extraction through drilling activities”.

Response:

Regarding oil and gas in Cyprus, the only activity take place is exploration drilling offshore. Only one exploration well was drilled and it is expected another one to be drilled by the end of 2012, with a goal of 2016 for the first production well. It is unknown at this time if it will be a platform or subsea assembly. The 2nd licensing round of submissions are now being reviewed with expected 2 to 5 years until drilling.

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?

   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

Hydrocarbons activities in Cyprus take place only offshore.

Sources of evidence:
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

When an exploration and/or production licence is given, a Production Sharing Contract will be signed between the Republic of Cyprus and the operator.

In Cyprus, only one private company has one Exploration License of Hydrocarbons.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

a. Trend (and number) of fatalities over the last 10 years.


c. Number of injuries in the most recent year.

d. Number of people employed.

e. Please provide data sources (if available).

Response:

We only had one exploration well for hydrocarbons and we didn’t have any major accidents.

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

We only had one exploration well for hydrocarbons and we didn’t have any major accident.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response:

We only had one exploration well for hydrocarbons and we didn’t have any significant occupational illness.

Sources of evidence:

V.3.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

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<tr>
<td>See response of the Department of Labour Inspection.</td>
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13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

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14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

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<th>Response</th>
<th>Sources of evidence</th>
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<tr>
<td>The legislation for hydrocarbons activities covers major accident hazards and occupational safety. In case some aspects aren’t covered by the legislation, we include them in the Production Sharing Contract that the operator signs with the Republic of Cyprus. An environmental plan also has to be produced and additional requirements for fire and hydrocarbon leakages from other directives cover preparation and mitigation of these. Ideally all of these could be under a Major Accident Hazard Report.</td>
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15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

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<th>Sources of evidence</th>
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<td>See response of the Department of Labour Inspection.</td>
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16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

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<th>Sources of evidence</th>
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17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

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<th>Response</th>
<th>Sources of evidence</th>
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<tbody>
<tr>
<td>When an exploration and/or production licence is given, a Production Sharing Contract will be signed between the Republic of Cyprus and the operator. In Cyprus, only one private company has one Exploration License of Hydrocarbons.</td>
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</table>
18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:  
See response of the Department of Labour Inspection.

Sources of evidence:

V.3.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:  
See response of the Department of Labour Inspection.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:  
See response of the Department of Labour Inspection.

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:  
See response of the Department of Labour Inspection.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:  
See response of the Department of Labour Inspection.

Sources of evidence:
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”? Does it cover divers in diving operations?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response: See response of the Department of Labour Inspection.

Sources of evidence:
30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
See response of the Department of Labour Inspection.

Sources of evidence:

V.3.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:
See response of the Department of Labour Inspection.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:
See response of the Department of Labour Inspection.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
See response of the Department of Labour Inspection.

Sources of evidence:

V.3.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
No response.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:

Sources of evidence:
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: See response of the Department of Labour Inspection.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response: See response of the Department of Labour Inspection.

Sources of evidence:

V.3.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response: For the first exploration well for hydrocarbons offshore Cyprus, the operator prepared an
Emergency Response Plan and Contingency Plan for Hydrocarbon Leakage & Fire. These plans covered all the aspects regarding the safety and health of the workers and were submitted, before the commencement of the drilling activities, to the competent authorities for approval.

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response: Regarding oil and gas activities offshore, it isn’t necessary to proceed to any changes in Directive 92/91/EEC because the proposed Regulation on safety of offshore activities of hydrocarbons covers all the aspects regarding safety. The only suggestion is that it is necessary that the drilling activities to be classified and separate guidelines shall be followed in each category. Any changes will depend on whether the regulation is accepted or not. If the regulation passes the overlap in requirements will need to be addressed. If the regulation is not passed, then Directive 92/91/EEC should take on some aspects of the regulation. Either way there should be a single Major Accident Report.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: No response.

Sources of evidence:

V.3.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
b. What (if any) objective measures are available to evaluate the burden?

c. Are any changes needed to minimise it?

Response:  
*See response of the Department of Labour Inspection.*

Sources of evidence:  

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?

a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.

b. How can the burden be minimised?

c. Can existing systems cope with the extra requirements?

Response:  
*See response of the Department of Labour Inspection.*

Sources of evidence:  

V.3.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:  
*The Republic of Cyprus is in favour of a Directive and not a Regulation, as this will provide the necessary flexibility to the Member-States to design the best structure organisation, reduce bureaucracy and complexity and will safeguard the existing well-functioning and effective practices.*

Sources of evidence:  

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:  
*The Directive isn’t equally effective for the more extreme environments. It is necessary that the drilling activities to be classified and separate guidelines shall be followed in each category.*

Sources of evidence:
45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:
The Directive isn’t equally effective for the more extreme environments. It is necessary that the drilling activities to be classified and separate guidelines shall be followed in each category.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:
It is necessary that the drilling activities to be classified and separate guidelines shall be followed in each category.

Sources of evidence:

V.3.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:
Proposal to EC for a Mediterranean forum for safety and environment. Categories and guidance for each category on what companies follow for safety would be useful.

Sources of evidence:

V.3.12 Attached Information

No further information.
V.4. NOTES FROM INTERVIEW WITH:

Regulator
Noble Energy

from
Cyprus
V.4.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Noble Energy</th>
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<tr>
<td>Stakeholder type:</td>
<td>Licensee</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td>Licensee</td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Cyprus</td>
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</table>

V.4.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response: No response.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response: No response.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response: No response.
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>No response.</td>
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5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

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<tr>
<td>No response.</td>
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V.4.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

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<th>Response:</th>
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<td>No response.</td>
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7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

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8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

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<th>Sources of evidence:</th>
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<td>No response.</td>
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9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

   Response: 
   No response.

   Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

   Response: 
   No response.

   Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

   Response: 
   There has only been one recordable injury but no loss time injuries (LTI).

   Sources of evidence:

V.4.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

   Response: 
   No response.

   Sources of evidence:
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: No response.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: No response.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response: Need to check with the drilling department whether any of the requirements for wells were prescriptive, however believe these are goal setting.

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response: Not aware of any. A Noble Energy representative was on board the whole time to cover environmental and health and safety issues. A legislative requirement for a safety representative was not communicated by the regulator. Noble and contractor’s safety representatives ensure conducting operations as they have said.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: No response.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: No response.

Sources of evidence:
V.4.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:  
No response.  
Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:  
No response.  
Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:  
The safety case included the mobilising of anchors, however would need to check the full scope of activities included. It is known on the environmental side transit was not included; however it did cover helicopters and safety vessels.  
Sources of evidence:
Source reference(s)

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:  
No response.  
Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:  
No response.  
Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:  
Noble energy organised all the transportation however would have to check the safety case to confirm if transportation was included.  
Sources of evidence:
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

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<td>No response.</td>
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26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

<table>
<thead>
<tr>
<th>a. What is the definition in the relevant legislation?</th>
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<tr>
<td>b. How do stakeholders understand this criterion?</td>
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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>A Management of Change is in place and major changes were discussed with the regulator however it is unknown what the government expectations were on this. Would have to ask the drilling contractor how they were involved and what questions were asked.</td>
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</table>

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

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<tr>
<td>Noble ensured quality checks (Not a regulatory requirement) were made of the bridging document to ensure standards are met and the systems were audited.</td>
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28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

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<th>Response:</th>
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<td>Noble try to work to one standard globally which is robust and has drawn on regulatory requirement elements of US, EU, ILO etc. requirements that make sense. The global management system can add other specific requirements as needed dependent on local regulations. The management system comprises of 14 key elements. [Might be possible for Noble to share these elements at a later date]. Noble was provided by the regulator the applicable laws to which they must comply, namely the Hydrocarbon Law, Environmental Impact Assessment Law, Production Sharing Law and EU Directives. The Ministry of Commerce, Industry and Tourism (MCIT) was the single regulatory point of contact and they brought in other regulators as required. The health and safety documents requested were sent in draft to MCIT to discuss the content and amended as necessary after circulated to competent Ministries. This was a single submission (including a lot of HSE requirements not seen elsewhere), which is different to previous experiences in other countries. The Safety Case was completed by the drilling company, while the operator completed the environmental requirements and Noble Energy ensured the two meshed. The Safety Case also went through 3rd party verification. The main submission for approval was the EIA (formal environmental approval process); however a lot of documents including Standard</td>
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Operating Procedures (SOP), Management System documentation and the Safety Case were also requested for review. Emergency response modelling was included in the EIA (hydrocarbon leakage event / modelling condensate and diesel for determining oil spill response plan, contingency planning including all hazards) and all submitted were reviewed prior to gaining approval for drilling to ensure the regulator requirements were satisfied.

The general practice was that Noble proposed the practice and the regulator recommended improvements, with the review process deemed very smart with a lot of useful feedback that might have been overlooked elsewhere. There were a lot of comments relating to health and safety procedures but less so on the Safety Case. Then a formal letter approving to go ahead was issued with one approval through MCIT.

Noble energy performed an extensive 3rd party audit of the drilling contractor (Noble Drilling) and vessel prior to receiving it including a week’s worth of sea trials.

A table top walk through of the whole well was conducted with the regulator and stakeholders (Drilled well on paper) i.e. service providers to identify all risks (Risk Assessment). There was a submittal and approval of the well design and access was provided to computer based data system. Requirements for controls vs designed would require input from the drilling manager.

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:  
In the safety case helicopter operations were controlled by Noble but would need to double check. A company was employed on behalf of Noble Energy for any medevac requirements.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:  
No response.

Sources of evidence:

V.4.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:  
No response.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:  
All plans and procedures issued for approval were the ones operated to. The Ministry visited the rig and a document was issued on completion detailing what activities had been conducted. Weekly meetings were conducted with MCIT with EHS performance likely on

Sources of evidence:
33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

Design of well was by Noble Energy while the operation and drilling was conducted by Noble Drilling. From a Government point of view the authority for safety on the rig was Noble Energy as responsible.

Sources of evidence:

V.4.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

No response.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:

Very useful to have one single point of contact and issuing the environmental and safety and health documentation to the same agency. Liked the performance based approach.

First experiences in the EU for some of the participants, however the regulatory regime is considered very thorough and detailed. The interactive process with the regulator is liked as it makes understanding the requirements very easy.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?

b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

No response.

Sources of evidence:
37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response: No response.

Sources of evidence:

V.4.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response: The performance based approach was liked but opportunities are seen to include other elements such as drilling design as long as the performance based approach is maintained.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response: The directive is good for consistency and there is nothing blatantly missing from the directive so no big issues with it. As countries have different regimes there is a need for directives to enable these to be tailored to each Member State. The performance based approach should be maintained. The Safety Case should include down well as well as topsides but remain goal orientated. However some guidance would be good such as a guideline on how to implement Directive

Sources of evidence:
40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

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### V.4.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

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42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

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V.4.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: There are so many differences between Member States which would be of concern if the EU implemented a Regulation. Implementation of a Regulation may result in additional hazards. Environmental and safety and health hard to match together to cover all types of risk.

Sources of evidence:

44. In your opinion is the directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: No response.

Sources of evidence:

45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response: No response.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response: No response.

Sources of evidence:
V.4.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

No response.

Sources of evidence:

V.4.12 Attached Information

No further information.
V.5. NOTES FROM INTERVIEW WITH:

Regulator
Danish Energy Agency, Offshore Safety Unit
Danish Working Environment Authority

from

Denmark
V.5.1 Demographic Questions

| Organisation: | Danish Energy Agency, Offshore Safety Unit  
Danish Working Environment Authority (regulate all mineral extraction activity onshore) |
| Stakeholder type: | Regulator |
| EU/EEA country/counties in which your organisation operates: | UK, Denmark, Norway (Netherlands) |

V.5.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response:

**Offshore**

a. The Offshore Safety Act (No. 1424 of 21 December 2005, on Safety, etc. on Offshore Installations for Exploration, Extraction and Transport of Hydrocarbons) with underlying regulations (executive orders) regulates licensees, operators, operating companies, contractors, offshore installation managers, employers, employees, all persons on board an offshore installation, suppliers, Emergency Response Committee, Accident Investigation Board, doctors, dentists.

b. The Offshore Safety Act applies to offshore installations situated in Danish territorial waters or on the Danish Continental shelf and to fixed offshore installations that are planned to be used in these areas. The Act covers work on site, work on drill ships, work on floating production storage and offload units, work on floating storage and offload units.

c. The Offshore Safety Act covers approvals of the overall design before commencing of building of a new fixed offshore installation and before commencing of major re-buildings of existing fixed offshore installations. The act covers permits before operation of: a new fixed offshore installation or a change of an existing fixed offshore installation or a mobile offshore installation. The Act covers permits from the supervising authority before any changes (which are not covered by section 27) to an offshore installation or the operational conditions of the installation that will be of essential importance to the risk of major accidents. Before a mobile offshore installation is moved from one position to another, the operator of the installation shall inform the supervising authority of the new position. Before a fixed offshore installation is dismantled, the licensee shall ensure that permission for the supervising authority is obtained.

d. The Offshore Safety Act covers: Exploration or extraction of hydrocarbons from

Sources of evidence:

**The Offshore Safety Act:**

- Section 3, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 59, 60, 52, 52 a.
- Section 27, 28; 29, 30, 31.
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

MANAGING RISK

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<th>the subsoil below the sea-bound. Activities on offshore installations which are not mentioned in section 2 (1) and which are covered by the Subsoil Act and are of safety and health significance, e.g. the storage of CCS and natural gas.</th>
<th>The Offshore Safety Act: Section 2, 3 (6).</th>
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<tr>
<td>See also our answer at Question 20, 21 and 22.</td>
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### Onshore

Please outline what the situation is onshore

#### 2. How effective is the relevant legislation in your country?

a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.


**Response:**

**Offshore**

See the DEAs annual reports about Denmark’s Oil and Gas Production – Subsoil Use


The relevant legislation is very effective.

**Onshore**

Please outline what the situation is onshore.

**Sources of evidence:**

DEA’s annual report

#### 3. What changes (if any) do you think are required following the Deepwater Horizon accident?

a. To national legislation.

b. To Directive 92/91/EEC.

**Response:**

**Offshore**

a. As is well known there is a proposal of a European Regulation on safety of offshore oil and gas prospection, exploration and production activities and DEA will act according to this new regulation when it is adopted and DEA will at the same time include other amendments as are considered necessary.

b. There is clear overlap in requirements for a Health and Safety Document (Directive 92/91/EEC) and a Major Hazard Report (New European proposals). Steps need to be taken to clarify to industry and regulators what steps are needed to meet the requirements in these areas.

There are also further overlaps (e.g. on general requirements to assess and control risks). The EC should reduce any overlap to a minimum and make it clear to operators and regulators how these two bits of European Legislation will work in practice.

If Major Hazard and general occupational health and safety requirements were clearly separated in Directive 92/91/EEC, then it would be easier to identify overlap with the proposed new regulation and take steps to make it clear what was required by industry and operators. For example, a statement highlighting that if they are meeting their major hazard requirements under the new European Regulation, they are also complying with the major hazard responsibilities under Directive 92/91/EEC.

**Sources of evidence:**
Work is needed to clearly clarify that the duty holders in both Directive 92/91/EEC and the proposed Regulation are compatible.
See also our answer at Question 39 and 47.

Onshore
Please outline what the situation is onshore.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:

**Offshore**
See DEA’s answer at Question 3.
See our answer at Question 39 and 47.

**Onshore**
Please outline what the situation is onshore.

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:

**Offshore**
First and foremost it is important to have a clear regulation. Next you could have a guideline to the directive.

**Onshore**
Please outline what the situation is onshore.

V.5.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response:

There is expansion on existing fields and some new development planned within oil and gas. Total 19 fields and 55 platforms.

One onshore facility is extracting salt from a salt dome, 500.000 – 600.000 tons a year.

Onshore two gas storage facilities, one aquifer and one in salt caverns.

3 geothermal plants and 4-5 in the planning phase.
Over the last 10 years 15 production wells/year and 4 exploration on a declining trend.

2011 production figures: 12.8 mio. m³ oil, 5.6 mio. Nm³ gas. Expected decline 5-10% per annum.

Oil production total 12.8 mio m³ in 2011. Sales gas production total 5.6 billion Nm³ in 2011. Production is in general expected to decline.

More information/statistics can be found in the latest report on Oil and Gas exploration and production activity in Denmark at the following Web Address:

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: All production is offshore.
Exploration drilling on land: one well every 5 years.

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:
Nordsøfonden (state owned) participate with 20% in most licences.
There are three key players in the Danish Oil and Gas industry DONG, Maersk and Hess. The first of these (i.e. DONG) is a public company, owned and run by the state. Maersk and Hess are private enterprises.

All organisations are regulated in the same way i.e. no special dispensations are in place for the state owned outfit DONG or indeed any other outfit. The regulations and the regulatory regime apply in equal measure to all stakeholders.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:
There has been 1 fatality over the past 10 years. The death was caused by a riser which was part of the pressure equipment.

Injuries (work accidents/LTI’s) in recent years (work-related accidents resulting in incapacity to work for one or more days beyond the injury date):
- 2009: 20

Sources of evidence:
There are approx. 3000 persons employed offshore

Accident frequencies in Danish offshore and onshore industries:

<table>
<thead>
<tr>
<th>Industry</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offshore installations*</td>
<td>4.6</td>
<td>2.3</td>
<td>3.5</td>
</tr>
<tr>
<td>Total onshore industries</td>
<td>9.5</td>
<td>10.5</td>
<td></td>
</tr>
</tbody>
</table>

Of which:

- Completion of construction projects          | 16.0 | 17.0 |
- Energy and raw materials                     | 7.8  | 8.7  |
- Installation/repair of machinery and equipment | 9.4  | 9.3  |
- Chemical and medical industries              | 8.7  | 8.1  |

* Overall accident frequency for fixed offshore installations and mobile offshore units

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:
A work accident in January 2011 where an experienced employee had the tip of a finger amputated. This resulted in an increased focus on risk assessments for all types of jobs.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

Response:

<table>
<thead>
<tr>
<th>Offshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008: 15</td>
</tr>
<tr>
<td>2009: 19</td>
</tr>
<tr>
<td>2010: 20</td>
</tr>
</tbody>
</table>

The majority has been related to musculoskeletal disorders, but also hearing injuries and skin disorders/eczema are high in numbers.

As from 1 July 2008, doctors have been obliged to report all diagnosed or suspected occupational diseases to the DEA. In addition, doctors must still report occupational diseases to the Danish Working Environment Authority and the National Board of Industrial Injuries.

The DEA supervised the psychological working environment in 2009 and 2010.

The general conclusion with regard to the inspections was that psychological working...
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

MANAGING RISK

The psychological working environment was not adequately defined in the companies’ management system and that factors relating to psychological working environment are not specifically considered in the risk assessments, but are considered indirectly in the assessment of other risk factors. In a few companies it was found that procedures for dealing with psychological working environment did not exist. It was also concluded that good camaraderie, a tone of civility and mutual trust prevailed on board the installations. The DEA found the psychological working environment on the offshore installations to be satisfactory and that none of the installations required a follow-up, adapted inspection with particular focus on this area. In the view of the DEA, the inspections have created a greater awareness and understanding among the companies and the employees of the issues relating to psychological work.


The DEA’s most recent supervision of special topics focused on the prevention of musculoskeletal disorders, both in 2010 and 2011. The DEA established that all operating companies addressed the subject of ergonomic working environment in their management systems. It was the DEA’s impression that the focus on ergonomic working environment in connection with inspections of the companies’ onshore administrative offices and offshore installations promoted greater awareness and understanding of the issue, among both the companies’ employees and the management on the installations. During the offshore inspections, the DEA established that certain ergonomic conditions could be improved, including work postures, working heights and reaching distances. Additionally, ergonomically correct storage in relation to weight and usage had not always been adequately assessed on the installations.

The DEA concluded that the design phase should include a more detailed assessment of future ergonomic conditions as well as a risk assessment of these


Onshore

No significant issues have been identified. Nevertheless, this is seen to be an area that needs to be focussed on much more.

V.5.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

Offshore

   a. The regulation in the Offshore Safety Act is goal-setting and not prescriptive and the same principle is applied in the Executive Orders that are granted pursuant to the Act yet sometimes the regulation in the Executive Orders can be prescriptive and that is to be sure that DEA has implemented the (prescriptive) directives correct.

   b. Fixed and mobile offshore units

According to the Offshore Safety Act the accommodation of the fixed and mobile offshore installations shall be tailored to the number of persons expected to stay on the installation and shall be arranged so as to ensure that the employees can rest and recuperate

Sources of evidence:

Offshore Safety Act: Section 38 (3)
undisturbed so as to make sure that they can attend to their tasks fully justifiably with regard to health and safety.

Fixed offshore units

New installations and changes to existing installations

According to Executive Order on Fixed Offshore Installations and Pipelines: Construction, design and equipment, the accommodation must be arranged in a number of cabins adapted to the number of people expected to stay overnight on board the installation at the same time in normal operation and maintenance.

The number of cabins must be such that each of the overnight persons has their own cabin.

The cabins must be appropriately arranged so that they are suitable both for accommodation, relaxation and deskwork and the cabins must be arranged with a private toilet room and bath and storage space for the overnight person’s clothes and belongings.

The cabins must be equipped with telephone, access to TV, radio and internet, the opportunity to see and hear films as well as hear music works and literary works.

Existing installations

For existing installations which before 1 January 2011 have been granted a permit or permission applies the basis of the approval given by the installation according to the rules then.

Cabins on fixed offshore installations built since 1988 are designed for use by one person. In several cases the Danish Energy Agency has required that 2 person cabins must be used by persons on opposite shifts, so that these persons are sleeping alone.

According to Executive Order No 1482 on operation, etc. of Offshore Installations, etc. The Danish Energy Agency may in connection with rebuilding or major repair work decide that cabins for one person on fixed offshore installations are temporary used by two persons. A detailed plan for the works including a description of the works, of the works duration and of the number of the persons who are going to stay at the installation must be submitted for the Danish Energy Agency.

A permit temporarily to use one person cabins for two persons can only be given if the cabin is suitably fitted up for such purpose and moreover has its own bathroom. Further, the other facilities in the accommodation section such as recreational rooms, changing rooms, cloakrooms etc. shall be reasonable in relation to the increase in the number of persons staying overnight.

The Danish Energy Agency can permit that cabins on installations which have an operating permit from before 1988 and where the cabins are permitted used for two persons at the same time, in situations as mentioned previously and on the conditions mentioned previously are temporarily used by three persons.

Mobile offshore units

According to Article 74 of Executive Order No 1481 of 14 December 2010 on Mobile Offshore Installations, etc.: Construction, design and equipment, the accommodation must be arranged in a number of sleeping places adapted to the number of persons expected to stay overnight on the installation at the same time in normal operation and maintenance.

The number of cabins shall as far as possible be such that each of the overnight persons are assigned their own room. To the extent that this cannot be met, the number of cabins that are not assigned to one person alone, shall be such that each cabin is given to a maximum of two persons.

The cabins must be appropriately arranged so that they are suitable both for accommodation, relaxation and desk work, and that there is room to store the employee’s clothes and belongings.
As far as possible each cabin must have immediate access to a toilet room with wash basin and bath designed for use for this cabin alone.

Where it is not reasonably practicable to meet the requirement of immediate access to a toilet room etc., it may be permitted to instead have immediate access to a toilet room which is designed for use for this cabin and an adjoining cabin alone.

Additional notes

**Offshore Legislation relating to mineral extraction**

In 2006, the legislation relating to offshore Oil and Gas activity (namely the Offshore Safety Act) was updated to incorporate a goal-setting approach (a move away from its earlier prescriptive foundations). The ALARP concept was also introduced at this stage. The Act is supported by various Executive orders that give more clarity on how the overall aims of the act are to be achieved.

The update was driven by a desire to modernise the existing legislation and stay abreast/in line with current best thinking with regard to regulation of offshore activity. The regulations are structured to conform with five key themes:

- Management
- Construction
- Operations
- Committees
- Administration

The provisions of the directive (i.e. Directive 92/91/EEC) are spread across the various sections/themes. On the whole, the aim is that all the legislation will adopt a goal-setting approach as the underlying principle. However, some executive orders combine both prescriptive and goal-setting approaches (as outlined above with regard to accommodation requirements).

Specific provisions apply with regards to accommodation. For example, a policy of one individual per cabin and the provision of adequate communications access (to alleviate the loneliness burden). These are strictly applied to fixed installations but are more flexible for drilling rigs (which tend to be designed differently). The key requirement here is full compliance with the 2001 MODU code, which although is a maritime based code, addresses issues beyond the maritime scope and is quite prescriptive. See also above with regard to accommodation requirements for mobile offshore units.

The Danish National Legislation covers the lifecycle of the facility as to fixed offshore installations.

Below is a list of the underlying regulations and guidelines to the Offshore Safety Act (be aware that the Offshore Safety Act is not quite updated):


**Onshore legislation related to mineral extraction**

The legislation governing drilling activity is organised differently to that which applies offshore. In the first instance, there is no equivalent to the offshore safety act for onshore activity. The H&S act is the primary piece of legislation that governs the H&S in all onshore workplaces. The requirements of the act are further made explicit by executive orders which are aimed at specific issues and/or industries. In this context of onshore drilling activity, there are two key Executive Orders. One related to “drilling” and the other related to “permanent workplaces”. The provisions of the directive are (on the whole) implemented within the executive order related to drilling. The transposition is not literal.
**13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?**

**Response:**

**Offshore**

Directive 92/91/EEC has been implemented together with other directives which are relevant to the area of the Offshore Safety Act. The directive has been implemented both in the Offshore Safety Act and the Executive Orders connected to the Act.

See response to Question 14.

**Sources of evidence:**

**14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?**

**Response:**

**Offshore**

The Danish Legislation about offshore safety is focusing on both major accident hazards, occupational safety.

**Onshore**

Please outline what the situation is onshore.

**Sources of evidence:**

**15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.**

**Response:**

**Offshore**

The Danish Legislation is using goal-setting requirement more than prescriptive regulations to transpose the requirements of Directive 92/91/EEC. The Offshore Safety Act entered in force on 1 July 2006 and replaced the previous Offshore Installations Act. Afterwards there has been a work on updating the executive orders that were granted pursuant to the old act and the new executive orders are more goal-setting that the old ones.

The regulations are quite prescriptive with regards to safety training and accommodation requirements. The regulation requires the use of recognised standards and the act presupposes that the most recent standards should be applied.

Going forward, the strategy is to move to a more extensive goal-setting regime as exemplified by the UK/Norwegian regimes. At the current time, the amount of guidelines available is understood to be limited. Guidelines/standards are developed under a tripartite model that involves all stake-holders.

Also see responses to the previous questions.

**Sources of evidence:**

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**NB In Danish Legislation, Acts are the primary items of legislation and are promulgated by parliament; Executive orders on the other hand are secondary items of legislations that put forward by persons responsible for administrating the provisions of the act (typically regulatory bodies /ministers).**

In general, onshore laws do not apply offshore and vice-versa. However similar provisions must exist in both dimensions and the onshore Working Environment act applies offshore.
**Onshore**

Please outline what the situation is onshore.

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16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

**Response:**

**Offshore**

The operating company shall ensure that the employees, before the work is commenced, are sufficiently trained to attend to the tasks according to the emergency response plan of the installation, cf. section 45(2), and to attend to own safety in an emergency situation.

The employer shall ensure that the employees are adequately instructed, and that they have the competence ensuring that their duties on the offshore installation can be performed fully justifiably in terms of health and safety, and that there is documentation available for this competence.

The employer must ensure that the employees have received the education and experience, which ensure that their work functions on an offshore installation can be handled fully justifiably in terms of safety and health, and that documentation is available for such education and experience.

The employer must ensure that the employees, regardless of the nature and duration of their employment, receive the necessary training and instructions in performing the work so as to identify, assess and reduce the risks as much as is reasonably and practicably possible.

The supervising authority must not disclose to the employer or others that the authority has received a complaint.

The operating company shall ensure that the health and safety activities are organised in collaboration with the employees. The employees or their representatives shall be involved in the planning of the performance of the work and planning of changes to the offshore installations as regards health and safety matters, including the related update of the health and safety case. The Minister can lay down rules on the collaboration mentioned including rules on protection of employees attending to tasks in connection with this collaboration against dismissal or other reduction of their employment conditions.

It depends of the working culture if the employees dare raise safety issues without fear of action being taken against them, e.g. not required back. But of course one must comply with the rules.

Regulatory provisions available that help to promote a safe culture include:

- **Provisions for anonymous reporting.** Individuals can call the regulator to report various issues. The regulator is obliged to protect the anonymity of the individual. Reports are also made via the unions who cascade the concerns upwards to the regulator. For the most part, the workforce is organised (i.e. are members of unions), hence this reporting avenue is valuable.

- **Formal documents** e.g. regulations, guidelines/standard etc. are developed under a tri-partite model. This ensures that a wide –range of concerns can be raised and addressed. As part of this model, there is an Offshore Safety Council who meet four times per year. Under the council, it is possible to have working groups who are set-up to address specific issues for e.g. regulations. Currently there is a working group on regulation which is very active and meets on a more regular basis. The offshore safety act is administered by mainly the DEA but also by the Danish Maritime Authority (DMA). As such representative from both organisations take part in the tri-partite discussions. The primary focus of the DMA is on maritime related issues largely reflected in the prescriptive

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**Sources of evidence:**

- The Offshore Safety Act: Section 50.
- 729 Executive Order on Management of Safety and Health on Offshore Installations, etc., Section 22 and section 23.
- The Offshore Safety Act: Section 63 a (2).
- The Offshore Safety Act: Section 46 (1) and (2).
- The Offshore Safety Act: Section 49
- Executive Order No. 1504 on Safety and Health Activities on Fixed Offshore Installations.
- Executive Order No. 1505 on Safety and Health Activities on Mobile Offshore Installations.
There are also requirements to have safety reps who are elected not prescribed by the organisation. The role can be full/part-time (at the discretion of the organisation). The reps have the power to stop work in extreme situations that are considered unsafe.

Several provisions also exist under contractual agreements between the social partners. These cover areas such as worker safety and conditions for strikes.

Furthermore, there is an expectation on the operator to build a good safety culture within the workforce.

Some initiatives have already been initiated in this regard and as a result, the companies e.g. Maersk is taking actions to improve the culture within its organisation.

**Onshore**

Please outline what the situation is onshore.

<table>
<thead>
<tr>
<th>17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong></td>
</tr>
<tr>
<td>See our answer at Question 8.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>18. What non-legislative guidance is used / available in your country?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a.</strong> What non-legislative guidance is available (if any)?</td>
</tr>
<tr>
<td><strong>b.</strong> To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?</td>
</tr>
<tr>
<td><strong>c.</strong> By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?</td>
</tr>
<tr>
<td><strong>Response:</strong></td>
</tr>
<tr>
<td>Offshore</td>
</tr>
<tr>
<td>The DEA has, in cooperation with the employers and workers, created non-legislative guidance about health and safety offshore. The DEA often uses guidance created by the Danish Working Environment Authority (i.e. guidance that are developed for onshore activity but also have applicability offshore e.g. working at height or in confined spaces.) Maybe the industry has made a few guidelines. We are aware that there has been made guidance about noise.</td>
</tr>
<tr>
<td>Onshore</td>
</tr>
</tbody>
</table>
### V.5.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

<table>
<thead>
<tr>
<th>a.</th>
<th>What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?</th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td>What does the relevant legislation interpret “normal” and “critical” to mean?</td>
</tr>
</tbody>
</table>

**Response:**

**Offshore**

*The operator shall ensure that a health and safety case is prepared for a fixed offshore installation which, as a minimum includes identification of the risks that are connected with the offshore installation, including any activity in connection with the offshore installation and its dismantling, and which may have serious consequences for the health and safety of the employees. Assessment of the risks. Demonstrate that the risks have been identified, assessed and reduced as much as reasonably practicable. Demonstrate that the management system ensures and documents that the requirements in the Offshore Safety Act and in rules laid down pursuant to the Act are complied with in normal as well as critical situations.*

**In sum, the legislations require that all risk in all phases (normal and critical) are identified. No sources of risk are seen to be special.**

Normal conditions are perceived to reflect standard operating conditions and critical conditions represents a departure from this. As an example, a kick during drilling activity would be taken as “normal” (as it will be risk that will be identified and managed within the safety management system), whereas a “blowout” would be seen as critical (NB the prevention of which will also be considered as part of the management system). The response phase to such an incident is covered by a separate emergency response plan.

In addition to the previous mentioned, special risk assessments for operation beyond the design basis are required by Danish offshore safety legislation. These are incorporated within the safety case and should state the lifecycle extension period it covers.

*The operating company shall ensure that a health and safety case is prepared for a mobile offshore installation which, as a minimum, includes identification of the risks that are connected with the offshore installation, including any activity in connection with the offshore installation and which may have serious consequences for the health and safety of the employees. Assessment of the risks. Demonstrate that the risks have been reduced as much as reasonably practicable. Demonstrate that the management system ensures and documents that the requirements in this Act and in rules laid down pursuant to this Act are complied with in normal as well as critical situations.*

**In connection with the design of a fixed offshore installation and changes to this, the operator shall ensure that the health and safety risks that are connected with the construction, layout, equipment of the installation and all activities connected with the installations have been identified, assessed and reduced as much as reasonably practicable. The design shall reasonably consider any future needs for extension of the capacity and function of the installation. Taking into account the design life of the installation, among other things, it shall as far as possible be endeavoured to use the best possible technology.**

*On entering into an agreement on use of a mobile offshore installation, the operator shall ensure that the construction, layout and equipment of the installation are fully justifiable in terms of health and safety.*

**In connection with planning of changes to a mobile offshore installation, the operating**

**Sources of evidence:**

- *The Offshore Safety Act: Section 23.*
- *The Offshore Safety Act: Section 24.*
- *The Offshore Safety Act: Section 33.*
### MANAGING RISK

| Company shall ensure that the health and safety risks connected with the change have been identified, assessed and reduced as much as reasonably practicable. | Section 34. |
| The operating company shall in connection with operation of offshore installations ensure that the health and safety risks connected with the activities on the offshore installation and all activities connected with the installations have been identified, assessed and reduced as much as reasonably practicable. | The Offshore Safety Act: Section 35. |
| The operating company shall constantly seek to improve the health and safety level through continued reduction of the health and safety risks. | The Offshore Safety Act: Section 36. |
| The individual employer shall, before the work is commenced, ensure that the health and safety risks in connection with the performance of the work have been identified, assessed and reduced as much as reasonably practicable. | Executive Order no. 729 of 3 July 2009 on Management of Safety and Health on Off. In. |
| The operating company shall ensure that the health risks on the installation, which are not related to the performance of the work and layout of workplaces have been identified, assessed and reduced as much as reasonably practicable. | |
| The Minister has laid down more specific rules on risk assessment and current improvement of the health and safety level. | |

#### Onshore

Explosions, fires, releases of toxic/dangerous material and falls from height are given special mention (i.e. taken to reflect special sources of risk)

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20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

#### Response:

**Offshore**

The legislation covers the risks the employees are exposed to from the moment they meet in the airport or shipping port, from where transport to the offshore facility is located to until they are back again.

The legislation does not cover mobile offshore units when they are towing or sailing. It applies when it is being used for offshore related activity. Where drilling activity takes place within the exclusion zone of a facility, the national legislation applies.

The rules apply in full measure to any facility that meets the definition of what is considered as an offshore installation. It applies in a limited/restricted sense to other facilities e.g. stand-by vessels and other stand by vessels.

The overall design of a production installation must be approved according to section 27 of the Offshore Safety Act prior to detailed project design and construction.

Before production can commence, the installation must have an operating permit in accordance with section 28 of the Offshore Safety Act. Similarly, a mobile offshore unit, such as a drilling rig, must have an operating permit prior to use in Danish territory.

In the case of significant modifications to existing installations that impact the risk of major accidents, the operating company must apply for a permit for modifications under section 29 of the Offshore Safety Act.

Before an offshore installation is decommissioned, the licensee must apply for a permit in accordance with section 31 of the Offshore Safety Act. No applications were submitted in 2011.

**Onshore**

Scope of application to be outlined.

---

### Sources of evidence:

- The Offshore Act: Section 34.
- The Offshore Act: Section 2 and 3.
- The Offshore Safety Act: Section 27, 28, 29 and 31.
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

**Offshore**

See answer at Question 1.

In general the Danish legislation applies within the safety zone around a facility.

With regards to lifecycle activities, the following are covered by the Offshore Safety Act:

- Construction/design (NB not the actual physical work, but the requirements e.g. for inherently safe design principles)
- Transit to the installation site. -Commissioning (assembly work)
- Any work on location (i.e. operations)
- Decommissioning (i.e. dismantling) NB at the current time, complete removal of the rig is not required by the regulations.


**Onshore**

A scheme similar to the above is understood to apply, please confirm.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

**Offshore**

The legislation covers exploration, extraction and transport of hydrocarbons from offshore units. In this regard, the focus is on the product as opposed to the process applied (non-discriminatory) and thus shale oil/gas extraction, gas storage and CCS (as long as hydrocarbons are being simultaneously extracted) offshore is covered. Exclusive CCS operations will not be covered.

The legislation also covers shale gas drilling offshore.

**Onshore**

Please outline what the situation is onshore.

Sources of evidence:

The Offshore Safety Act: Section 2(1).
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offshore</strong></td>
<td>The Offshore Safety Act: Section 3(6)</td>
</tr>
<tr>
<td>The legislation also covers carbon dioxide storage and natural gas storage from existing oil and gas offshore installations.</td>
<td>The Subsoil Act: Consolidated Act No. 960 of 13 September 2011 on the Use of the Subsoil of Denmark: Section 1(2).</td>
</tr>
<tr>
<td>The Minister can lay down rules to what extend sections mentioned in the Offshore Safety Act shall apply to activities on offshore installations not mentioned in section 2(1) in the Offshore Safety Act and which are covered by the Subsoil Act.</td>
<td></td>
</tr>
<tr>
<td>The Subsoil Act covers: “Prospecting, exploration and extraction of resources in subsoil, which has not been subject to private economic exploitation in this country before 23 February 1932. The use of underground storage or purposes other than the extraction of resources and scientific studies of importance for the above mentioned activity”</td>
<td></td>
</tr>
<tr>
<td>We are of the opinion that it should be considered to extend Directive 92/91/EEC to cover carbon dioxide storage.</td>
<td></td>
</tr>
<tr>
<td>The European Commission should consider extending Directive 92/91/EEC to cover the storage of hydrocarbon gas, as well as its extraction.</td>
<td></td>
</tr>
<tr>
<td>There is a need for the Commission to clarify (in guidance) that the current directive covers shale gas extraction and underground coal gasification. The definition of a mineral may also need clarification. For example, is the gas from underground coal gasification or salt a mineral under the directive?</td>
<td></td>
</tr>
<tr>
<td>Also see response to Question 22.</td>
<td></td>
</tr>
<tr>
<td><strong>Onshore</strong></td>
<td></td>
</tr>
<tr>
<td>Please outline what the situation is onshore.</td>
<td></td>
</tr>
</tbody>
</table>

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offshore</strong></td>
<td>Executive Order No. 1480 of 14 December 2010 on Fixed Offshore Installations and Pipelines: Construction, design and equipment: Section 2(8)</td>
</tr>
<tr>
<td>See our answer at Question 20. The legislation does not cover diving operations.</td>
<td></td>
</tr>
<tr>
<td>In one of our executive orders workplace is understood as a place on the offshore facility of performing a job.</td>
<td></td>
</tr>
<tr>
<td>With regards to diving operations, diving operations related to a facility will be covered under the national legislation.</td>
<td></td>
</tr>
<tr>
<td>More clarity is required on what is understood to constitute a mineral under the scope of Directive 92/91/EEC as well as whether transportation is or not covered.</td>
<td></td>
</tr>
<tr>
<td><strong>Onshore</strong></td>
<td></td>
</tr>
<tr>
<td>Please outline what the situation is onshore.</td>
<td></td>
</tr>
</tbody>
</table>
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

**Offshore**

“Employer” is defined: “Employer shall be construed as the company that is authorised to instruct the employees who carry out work on offshore installations.”

The legislation regulates: See our answer at Question 1.

The licensees carry the overall responsibility for health and safety and shall ensure that the operator can fulfil the health and safety duties that rest with him. Where there has not been designated an operator the licensee shall ensure that the operating company can fulfil its health and safety duties. Further, it is the responsibility of the operator to ensure and supervise that contractors carry out their work in accordance with the requirements in the legislation. It is the responsibility of the operator to ensure that the operating company can fulfil the health and safety duties that rest with him.

The operating company has to ensure that all parties working on a facility cooperate fully. Joint responsibility for safe operation rests with all the players involved.

On the whole, the licensee (or license holder) has overall legal responsibility for safe operation.

On manned offshore installations it is the responsibility of the operating company (drilling contractor for MODUs) to ensure health and safety on the installation under the supervision of the operator. The operating company and the operator also have the responsibility to ensure that any contractor working on their behalf has the necessary instructions with regard to health and safety, and to coordinate health and safety between contractors. The management of contractors shall be a part of the management system. The duties of the operating company shall be carried out by an Offshore Installation Manager (OIM) who shall be overall responsible for the health and safety conditions on the offshore installation.

Each contractor is responsible for ensuring that any sub-contractor has the necessary instructions with regard to health and safety.

The responsibility for the health and safety of each individual employee lies with the respective employers.

**Onshore**

The same definition of employer given above applies i.e. the company that is authorised to instruct the employees BUT the oversight/responsibility might be different. Actual situation to be clarified.

Sources of evidence:

*The Offshore Safety Act:*

Section 4(5)

Section 8(3)

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

**Offshore**

During operation of an offshore installation the operating company shall ensure that the health and safety case is updated in case of changes to the offshore installation, its design, equipment or operational conditions, if these changes affect the risk of injuries.

Sources of evidence:

*The Offshore Safety Act:*

Section 25(1)
### Onshore

A similar approach is used onshore. The H&S case should be updated with any changes that have an impact on the way the work is organised and/or executed.

<table>
<thead>
<tr>
<th>27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or a subject to independent/peer review? If so, how is this achieved?</th>
</tr>
</thead>
</table>

**Response:**

**Offshore**

The evacuation analysis must be assessed by an independent expert, recognised by the Danish Energy Agency, with a view to whether the analysis complies with the requirements in the executive order, 21(5). Equipment that fall under the PED must be assessed by accredited notified bodies. Independent assessment is voluntary in other areas.

The assessor must be fully independent and competent (i.e. 3rd party is a must). Intra-organisational reviews are not favoured.

As documentation for compliance with recognised norms and standards in section 20(2) of the Offshore Safety Act, the operation company can use a certificate issued by a certifying body. 33(1)

Independent verification of the fact that an offshore installation, parts thereof or its equipment fulfil requirements laid down in or pursuant to the Offshore Safety Act can partially replace the management system for safety and health. 34(1)

Before the installation is commissioned, load-bearing constructions on fixed offshore installation must be verified for compliance with legislation, including approved standards pursuant to section 42 of the Offshore Safety Act. 36

The Danish Working Environment Authority’s safety regulations on designation of notified bodies, etc. must be applied with respect to area, conditions of appointment, revocation and transitional provisions when designating the notified bodies, third party agencies and authorised bodies to be notified to the European Commission to implement the standard conformity assessment procedures, etc. of the products covered by sections in the executive order on fixed offshore installations and pipelines about simple pressure vessels, design of pressure equipment, transportable pressure equipment and refurbishment of lifts, etc.,

The operator has full ownership for all verification reports

During the design phase of a fixed offshore installation, the operator must ensure that the safety-critical elements on the installation are identified and that it appears from the risk assessment, which risks are due to failure of the elements in question.

Before the commissioning of an offshore installation, the operating company must ensure that the safety-critical elements on the installation are identified and that it appears from the risk assessment, which risks are due to failure of the elements in question.

Prior to any modification of the offshore installation, that may be of essential importance to the risk of major accidents, the operating company must ensure that the safety-critical elements involved in the modification are identified and that it appears from the risk assessment, which risks are due to failure of the elements in question.

In connection with operating the offshore installation, the operating company must see to it that the safety-critical elements are applied and maintained so as to ensure that the safety risks on the installations are not increased.

**Sources of evidence:**

- 729 Executive Order on Management of Safety and Health on Offshore Installations, etc., Section 21(5)
- Section 33
- Section 34
- Section 36

**Executive Order Fixed Offshore Installations and Pipelines: Construction, design and equipment:**

Section 133(1)

**Executive Order no. 729 of 3 July 2009, on Management of Safety and Health on Offshore Installations, etc.: Section 11.**
In connection with the dismantling of the offshore installation, the operator must see to it that safety-critical elements are identified and that the risk assessment includes documentation of what risks are attached to failure of the elements in question.

**Onshore**

Please outline what the situation is onshore.

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and/or other independent party? If so, how is this achieved?

Response:

**Offshore**

For fixed offshore installations the operator shall ensure that a management system for health and safety is established and maintained, ensuring and documenting that the design, fabrication, installation, change or dismantling of the installation conform to requirements laid down in or pursuant to this Act. The management system shall be based on recognised norms and standards for management systems or other similar systems and shall be established before planning or dismantling of the installation is commenced.

The operator shall ensure supervision of compliance with the management system.

The operating company shall establish and maintain a management system for health and safety, which ensures and documents that offshore installations, their condition, operation and maintenance as well as the performance of the work conform to the health and safety requirements laid down in or pursuant to this Act. The management system shall be based on recognised norms and standards for management systems or other similar systems and shall be established before operation of the installation is commenced.

The operating company shall ensure supervision of compliance with the management system.

Independent verification that the installation, parts thereof or its equipment fulfill requirements laid down in or pursuant to this Act can partially replace the systems mentioned in sections 19 and 20. Such verification shall be made by experts recognised by the supervisory body.

The health and safety case has to be submitted under a permissioning regime at the following stages/milestones:

- Design
- Modifications/refits
- Before operation of fixed installations
- Following major changes
- Decommissioning of fixed installations
- MODU’s (before operation)

NB The requirement to submit the health and safety case is not included within the directive as it currently stands.

Safety critical elements must be identified within the health and safety case but there is not requirement for their independent verification.

See also our answer at Question 27.

**Onshore**

The employer has to conduct a workplace assessment and develop a report. This report
29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

**Offshore**

The legislation covers workers who perform work in connection with rescue operations on offshore installations, as there are requirements that some of the employees on an offshore installation are trained to for example operation of lifeboats, life rafts and rescue boats.

When conducting drilling operations, one or more stand by vessels must be engaged in emergency response for an offshore installation. Furthermore, one or more stand by vessels must be engaged in emergency response for offshore installations which perform activities other than drilling activities if according to the risk assessment in Executive Order on Management of Safety and Health on Offshore Installations, etc., these activities involve a similar risk to those on board the offshore installation.

To be engaged in the emergency response for an offshore installation, a stand by vessel must be approved by the Danish Maritime Authority.

**Onshore**

Please outline what the situation is onshore.

Sources of evidence:

Executive Order No. 798 of 11 July 2012 on Emergency Response on Offshore Installations:

Section 14

Emergency Order No. 198 of 11 July 2012 on Emergency Response on Offshore Installations:

Section 27

30. How does your country's relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

**Offshore**

In Denmark there is a Consolidation Act No. 645 of 8 June 2011 on Equal Treatment of Men and Women as regards Access to Employment etc.

Particularly sensitive risk groups including pregnant women should be protected from the dangers which specifically affect them. Protective measures shall, where possible, consist of technical measures in the offshore installation.

Pregnant and nursing mothers should be allowed to rest in appropriate conditions.

Offshore installation shall if necessary be designed according to disabled staff.

**Onshore**

Please outline what the situation is onshore.

Sources of evidence:

Executive Order No. 1480 of 14 December 2010 on Fixed Offshore Installations and Pipelines:

Section 67

Section 68

Section 69

V.5.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

Sources of evidence:
See our answer at Question 1 Point d.

**Offshore**

Through inspections and dialogue with the companies, the DEA continuously strives to ensure that the health and safety level in the Danish offshore sector remains among the highest in the North Sea countries. The three main types of supervision are immediate inspections, project supervision and operations supervision.

**Immediate inspections**

Immediate inspections are carried out in connection with work-related accidents and major near-miss occurrences. In the event of immediate inspections, the DEA will assist in clarifying the sequence of events in cases where the police are involved, while the DEA will be solely responsible for this clarification if the police are not involved.

**Project supervision**

Project supervision consists of supervising new facilities and major modifications to existing offshore installations.

**Operations supervision**

The majority of inspections concern operations and comprise announced regular inspections, unannounced inspections and the supervision of special topics.

**Regular inspections**

Usually, the DEA carries out annual inspections of the operating conditions on all manned fixed installations and mobile units. Among other things, the annual inspection covers three standard inspection items: a review of work-related accidents, hydrocarbon gas releases and the maintenance of safety-critical equipment.

**Unannounced inspections**

Unannounced inspections are carried out if announcing the inspection would compromise its purpose, e.g. when checking compliance with the regulations regarding rest periods, accommodation facilities and emergency procedures for the increased manning of installations, painting projects, etc. Moreover, unannounced inspections are carried out if unlawful circumstances are reported, or if otherwise warranted by employee health and safety considerations. An unannounced inspection differs from the annual inspection of operations in the sense that the programme normally only focuses on two or three relevant issues.

Unannounced inspections are carried out by appropriating seating space on a helicopter at the airport. With this approach, operators get ~ 2 hours’ notice (for flights from the shore). Between installations, the notice period reduces to 20 minutes.

Between three and five unannounced inspections are performed annually.

**Onshore**

Onshore numerous inspections are carried – all announced. Unannounced inspections are rarely used.
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

**Offshore**
The process is successful but can be improved. For example by better defining the ALARP-principle and developing more guidelines

**Onshore**
Difficult to say and experience in this regard is limited. Nevertheless, it is perceived to be successful as there have been no major incidents.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

All persons on board an offshore installation shall conform to the procedures that are determined for work and stay on the installation and respect the measures taken concerning health and safety matters. It can be procedures which the operation company has established but also procedures about health and safety laid down by others. This can for example be procedures established by the employer. The same regard transport to and from the installation.

The employer shall ensure that health and safety risks connected with the work have been identified, assessed and reduced as much as reasonably practicable. The employer shall ensure that supervision is carried out as to whether the risks referred to above have been identified, assessed and reduced as much as reasonably practicable. The employer shall inform his employees of the health and safety risks that may be connected with their work. Furthermore, the employer shall ensure that his employees receive the necessary training and instructions in performing their work so as to identify, assess and reduce the risks as much as reasonably practicable. If conditions speak in favour of this, the employer shall make sure that surveys, tests and inspections, possibly by experts, are carried out to find out whether the duties referred to above have been fulfilled. If there is more than one employer on the same offshore installation, these employers shall co-operate with each other on conditions that are important to health and safety. This co-operation shall be established by the operating company.

In the context of the regulator, their direct employers are legally responsible for their safety. However, among others the operating company also has some responsibility (see above).

Sources of evidence:

The Offshore Safety Act: Section 16
The Offshore Safety Act: Section 10

V.5.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

See our answer at Question 2.

**Offshore**
The approach is seen to be effective. The learning loop will drive further improvement. The regulations are more flexible (i.e. the goal-setting approach) and were developed as they were seen as helping to deliver safety. Frequent changes in regulation are typically
disruptive and the new regulations will significantly limit the potential for change.

Onshore
Please outline what the situation is onshore.

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
Offshore
a. See our answer at Question 2.
b. Maybe the number of injuries.
c. 9.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
Offshore
a. Especially in our executive orders we sometimes have a mix between prescriptive legislation and goal setting legislation because we – during the prescriptive legislation – want to be sure that we have implemented the 92/92 directive correct.
b. c.

Strengths
- The directive has been a positive influence on the development of the Act and associated Executive orders.
- The directive is also perceived to have some influence in helping to create a level playing field in Europe.

Weaknesses
- The prescriptive elements within the directive also act as hindrance to adopting fully goal-based legislation.

Onshore

Sources of evidence:
Please outline what the situation is onshore.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:
   a. As mentioned above at our answer to Question 32 the ALARP-principle should be further defined in our legislation.
   e. As an example why it – in our opinion – could be a good idea to split up the annexes in the 92/91 directive into onshore and offshore is the Part A, no. 19 about pregnant women and nursing mothers. There are not nursing mothers on an offshore installation. Such a section sends a wrong signal to the users of the legislation as it is important that there is a common understanding that the sections are sensible.

Sources of evidence:

V.5.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
   Offshore
   a. Currently in a learning loop following a major change and it is not prudent to change legislation too frequently due to the associated disruption.. The Offshore Safety Act, which was passed with the support of all parties in the Danish Parliament in December 2005, replaced the previous Offshore Installations Act. Some of the provisions in the Old Act had been maintained, and the work on updating these provisions went on until December 2010. So it is a relatively new legislation. We are of the opinion that the regulation adequately protects the safety and health of workers.
   b. Yes.
   c. Yes during the ALARP-principle

Onshore

Please outline what the situation is onshore.
39. Are changes needed in Directive 92/91/EEC?
   
a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
c. Does the directive specify adequate minimum safety and health requirements?
d. Is it consistently interpreted among the Member States?
e. Is the directive free of other significant gaps?
f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
g. Otherwise, what changes are needed?

Response:

**Offshore**

**d.** We are not aware of this.

e. The directive is not as clear as it could be at explaining the health and safety responsibilities of the key players offshore (e.g. Licensee, installation operator, well operator and contractors). As the directive only refers to the employer, the role of each of these players is not clear (e.g. does every employer on an installation needs to produce a health and safety document, or is this requirement only on the main employer). The EC should produce guidance to explain how the directive applied to each key player offshore. It is felt that this is particularly important for new entrants to the industry (operators and regulators).

The Licensee often appoints the person in control of the offshore installation. It is important that the Licensees are required to: appoint someone who is competent; that they also provide appropriate resources for them to deliver their health and safety roles and responsibilities; monitor the capability of operators and their ability to discharge their responsibilities. If the Licensee is an employer, they may already have these responsibilities, but if they are not an employer they may not. The EC should consider this issue about the Licensees’ responsibilities and explore how best to clarify the requirement to the Licensees (e.g. in guidance or amendments to the directive).

The directive contains a general maintenance requirement in Article 3.1(a), which indicates that workplaces (which could include the installation) should be maintained. The more detailed maintenance section in the Annex to the directive (Part A 4.1 and 4.2) appears to only cover the maintenance of plant and equipment, including safety equipment. Although maintenance of the asset may be covered by Article 3.1(a), this is a growing area of importance and this requirement should be made a lot clearer.

The European Commission should consider including a requirement to maintain the offshore asset, including its plant and equipment, for its whole life cycle (e.g. up to the point where it is demolished).

Directive 92/91/EEC indicates in the Annex (Part C 1.2) that the employer shall observe the procedures and arrangements laid down in the Health and Safety Document during the planning and implementation of the relevant stages covered by the directive. There is also a statement on implementation in the Framework Directive (Article 6 (2). We feel that the directive could benefit from the inclusion in Directive 92/91/EEC of a clearer statement indicating that the requirements in the health and safety document should be implemented using appropriate means, structures and management systems (including follow up and review).

The directive does not appear to cover the whole life cycle of the installation. For example 3.1(a) covers design construction, operation, major modification and maintenance, but does not cover decommissioning, dismantling and deconstruction. We think that these high risk

Sources of evidence:
activities should be included within the scope of the directive.

See also our answer at Question 47.

See our answer at Question 3.

In summary,

- The annexes within the directive should be more clearly delineated to specifically address onshore issues respectively.
- Certain provisions contained therein are too prescriptive
- Definitions/clarifications are required on the terms/concepts used.
- More suggestions to be provided.

**Onshore**

Please outline what the situation is onshore.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

**Response:**

No response.

**Sources of evidence:**

**V.5.9 Administrative burden**

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

**Response:**

Offshore

We have not measured this burden. However, more clarity in the directive would help to alleviate the burden.

Onshore

Please outline what the situation is onshore.
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:

**Offshore**

   c. We have not assessed it.

**Onshore**

Please outline what the situation is onshore.

Sources of evidence:

V.5.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

A new European Regulation on offshore oil and gas has been proposed, not a directive. The Commission argues that this is needed to improve implementation consistency, but we do not support this view. We think that consistent standards can continue to be implemented consistency via well worded directives.

We have noted that the proposed regulation is goal setting, something we support, and includes detailed requirements on Member state to ensure regulatory oversight. We welcome this approach as a strong independent regulator, which is well resourced and proactive, is just as important as legal requirements on operators if we are to ensure that offshore health and safety risks are effectively managed. However, if a directive is selected as the legal instrument, both of these positives issues could also be incorporated.

The EC should produce guidance to support European Regulations and directives. Reference should also be made to good practice. This is very important in the case of European Regulations as they are direct acting and Member States and Industry need to clearly understand what is required. We also think there is also a need for the EC to do more to reduce overlap between new European Regulations and existing European legislation.

We wish well worded directives, which will gives Member States the flexibility to adopt new requirements, while maintaining the option of meshing these with existing domestic regulations. This is seen as a significant step to maintaining safety standards and limiting the burdens on regulators and industry (e.g. from removing legislation and updating...
44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

The directive approach is the preferred option in all locations. However, the provisions therein will need to be better clarified.

Sources of evidence:

See responses in Question 43.

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

No response.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:

No response.

Sources of evidence:

V.5.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

Continuation of the answer to Question 39:
The directive does not cover the full well life cycle (e.g. design, construction, control and well integrity management). The directive only requires that suitable well control equipment, like blow out preventer, is provided. The early lessons from Deepwater Horizon indicate well integrity issues are crucial to avoiding major accidents. Directive 92/91/EEC

Sources of evidence:
should be updated to ensure it also covers well integrity and control issues.

The EC should highlight (perhaps in guidance) that KPIs and verification should be part of the well management system.

The more detailed maintenance section in the Annex to the directive (Part A 4.1 and 4.2) covers the maintenance of plant and equipment, including safety critical equipment (SCE).

The Commission could consider to use the definition of SCE used in the UK and Denmark: “Such parts of an installation and such of its plant (including computer programmes), or any part thereof-

a. the failure of which could cause or contribute substantially to; or

b. a purpose of which is to prevent, or limit the effect of, a major accident.”

The Commission needs to give employers a steer, perhaps in guidance, on what extra steps they should be taking for SCE (e.g. increased frequency of examination and testing and that verification and KPIs should be part of the SCE management system).

The European Commission should take steps (e.g. in the preamble to the directive or guidance) to highlight that the directive applies equally to fixed and mobile installations. The current requirement in the directive does not make it clear to industry and the regulator what is required in relation to offshore accommodation. There needs to be a link between the directive’s accommodation requirement and health and safety (e.g. to minimise the effect that sleep deprivation has on health and safety).

The EC should consider removing some of the duplication from the Annex to the directive and when appropriate use more consistent wording. For example some wording is very detailed and could be phrased in a more goal setting way. If the requirements in the Annex to Directive 92/91/EEC are compared with the main articles of the Directive 92/91/EEC (and in some cases the Framework Directive) there are also duplication.

The Annex to the directive covers occupational safety as well as major hazard control requirements. If the requirements related to these two areas are separated out, this might make it easier for industry and regulators to understand what is required. This step may also make it easier for the EC to explain the overlap between this directive and its proposed European Regulation on oil and gas and how they will work together.

The Annex to Directive 92/91/EEC could be improved by moving from three Annexes to two that covered all the requirements for onshore and offshore drilling separately. Alternatively, a single table could be produced which cleared outlined all the requirements, highlighting when they applied (e.g. solely to offshore or onshore or to both). Steps could also be taken to clearly group together and mark occupational safety or major hazard requirements. New tables or Annexes could also make reference to standards and best practice.

The Commission should consider including a requirement to review the Health and Safety Document in Directive 92/91/EEC.

### V.5.12 Attached Information

No additional information.
V.6.    NOTES FROM INTERVIEW WITH:

Industry
Maersk Drilling

from

Denmark
V.6.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Maersk Drilling</th>
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<td>Stakeholder type:</td>
<td>Drilling contractor</td>
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<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/county in which your organisation operates:</td>
<td>UK, Denmark, Norway (Netherlands)</td>
</tr>
</tbody>
</table>

V.6.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning )?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO\(_2\) injection, CCS and fracking?

Response:

Parties covered are operators, contractors, subcontractors, workers, suppliers, authorities, including emergency response (internal resources).

Transport to and from the unit are required to be risk assessed, but helicopter operations are regulated by the CAA, whilst all work on a unit, connected servicing vessels or accommodation units are regulated by the offshore safety act to the extent that their activities are directly connected with the exploration or production of hydrocarbons

The offshore safety act covers project phase, construction phase, installation, operation, maintenance, changes and decommissioning.

MD does not engage in this type of operations. Also, believe onshore activities in DK are very limited.

Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response:

The directive is implemented through the offshore safety acts and associated orders

The offshore safety act is goal setting, and the responsibility for reducing risks to ALARP rests with the operators and contractors.

The national legislation (that also implements the pertinent directives) has been effective, measurable through the offshore safety statistics, reducing hydrocarbon leaks from 36 in 2004 to 2 in 2010. The number of work related accidents has also decreased remarkably

Sources of evidence:
3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response:
There could be added value in strengthening the focus on the fact that an adequate management system for the commercial entity to maintain major accident risk levels to ALARP.

Generally, it could be clearer that one of the most important considerations for the commercial entity is to ensure that the greatest amount of resources is spent where it yields the greatest benefit in risk reduction, and, while the legislation does focus on MAEs, this could be enhanced further, as there is often a tendency towards focussing on OHS issues, as these are more familiar, and appear more manageable. This is not a flaw in the legislation, but a suggestion to “shift perception”.

Sources of evidence:
No source – opinion based on organisational “lessons learned”

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:
Believe that any changes to offshore safety legislation should be under the umbrella of updating existing instruments.

Creating new offshore safety legislation could create overlap, confusion and unnecessary administrative burdens. An HSE case type document could cover both the “major hazards report” and the health and safety document.

Sources of evidence:
No source – opinion based on organisational “lessons learned”

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:
Initiatives by the regulators such as NSOAF have provided great added value in being a vehicle for knowledge sharing amongst the regulators.

Further, industry fora (such as Step Change, OLF, BROA and Task Force Zero) have a valuable role in best practice sharing.

Sources of evidence:
No source – opinion based on organisational “lessons learned”

V.6.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d.Extent and plans for other “extraction through drilling activities”.

DNV Reg. No.: PP030087
Revision No.: 1 - Final
Date: 2013-02-15
Response:

Presently we have one rig operating in the Danish sector.

The largest number of units we have had operating was three at a time. On average, drilling activity has been at 4 wells per rig per year.

Maersk Drilling has no production activities.

Maersk Drilling has no extraction projects.

- Drilling activity is on the rise in Norway and UK, but not in the Netherlands.
- Drilling in harsh environments is a key focus area for Maersk.

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

Maersk Drilling has no onshore activities in the Danish sector.

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

Assume that this question would be for the regulator to answer.

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:

The data below is for Maersk Drilling in Danish waters

- On the whole, the statistics show a downward trend, particularly in recent years (the last three)

<table>
<thead>
<tr>
<th>Year</th>
<th>Man hours</th>
<th>First Aid's</th>
<th>Medicals</th>
<th>RWC</th>
<th>LTI</th>
<th>Fatalities</th>
<th>Total Personal Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>751,223</td>
<td>18</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>26</td>
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<td>2003</td>
<td>932,906</td>
<td>34</td>
<td>9</td>
<td>3</td>
<td>4</td>
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<td>50</td>
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<td>2004</td>
<td>772,127</td>
<td>8</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>2005</td>
<td>646,172</td>
<td>9</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td>2006</td>
<td>730,587</td>
<td>22</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>26</td>
</tr>
</tbody>
</table>

Sources of evidence:

- MD operational history
- Maersk Drilling Synergi data
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

MANAGING RISK

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Incidents</th>
<th>Fatalities</th>
<th>Injuries</th>
<th>Significant Injuries</th>
<th>Minor Injuries</th>
<th>Total Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>829,595</td>
<td>31</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>37</td>
</tr>
<tr>
<td>2008</td>
<td>589,920</td>
<td>14</td>
<td>7</td>
<td>4</td>
<td>2</td>
<td>27</td>
</tr>
<tr>
<td>2009</td>
<td>590,352</td>
<td>28</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>37</td>
</tr>
<tr>
<td>2010</td>
<td>697,264</td>
<td>16</td>
<td>2</td>
<td>0</td>
<td>1</td>
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<tr>
<td>2011</td>
<td>792,156</td>
<td>17</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td>2012 by End April</td>
<td>301,864</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>

Further stats will be provided once these are received.

Further statistics to be supplied (statistic breakdowns for spills/personnel injuries for the North sea vs. AUS/GoM/WAfrica).

Indicated that OGP and IADC publish data on global accident statistics which will be useful sources of information:

- The latest OGP report (Titled “Safety performance Indicators – 2010 Data”; published June 2011) has already been identified as a key source of safety information and downloaded.
- The IADC Data has been accessed from the IADC website.

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

Notably Piper Alpha, Alexander Kielland, Macondo, Montara, V-rig punch through, R-rig helicopter accident, a contractor fatality, well control situation on D-rig.

The DWH incident has also resulted in changes (technical, procedural and operational) to how Maersk Drilling operates. Changes include:

- More emphasis on behavioural measures (mostly training on these issues)
- Bow tie analysis has been implemented for every major accident hazard (increases visibility)
- The MOC process has been updated
- Additional training requirements for overrides etc.
- New safety critical equipment maintenance indicators have been developed and under development

These changes have been circulated with Maersk Globally in a document titled “Changes for the post Macondo era”.

Sources of evidence:

Most recent is “Changes for the post Macondo era” within MD. Copy can be submitted if DNV so wishes?

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response:

Musculoskeletal illnesses/disorders generally figure the highest, whilst skin disorders and...

Sources of evidence:

http://www.ens.dk/Documen
V.6.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

The requirements of the directive have been transposed into the Danish Offshore Safety act (O.S.A) and associated orders.

The act and the orders are, however, more detailed than the directive, as they are not only implementing the directive, but also national requirements to the working environment and assessment and analysis of MAHs etc.

They are also more focused in terms of MAH prevention, ALARP and responsibility. They include more specific training requirements as well as include provisions for the involvement of safety organisations on safety related issues.

Guidance is furthermore provided to the act and the orders, to clarify how the authority expectations can best be met.

Please also see attached list of associated orders to the O.S.A.

The O.S.A. has more provisions that directly relate to the SMS required, and MAE, while the directive even if quoting hardware barriers required for the management of major hazards, is very focused on OHS issues (changing rooms, facilities, work exposures etc.)

Sources of evidence:

- LOV nr 287 af 15/04/2009 - Gældende
- Lov om ændring af offshoresikkerhedsloven
- Klima- og Energiministeriet
- LOV nr 107 af 07/02/2007 - Gældende
- Lov om ændring af offshoresikkerhedsloven (Begrænsning af arbejdsgivernes strafansvar og skærpelse af straf for visse overtrædelser, der begås af ansatte, samt udvidelse af lovens anvendelsesområde til indkvarteringsfaciliteter på skibe, m.v.)
- Klima- og Energiministeriet
- LOV nr 1424 af 21/12/2005 - Gældende
- Lov om sikkerhed m.v. for offshoreanlæg til efterforskning, produktion og transport af kulbrinter (offshoresikkerhedslov)
- (Offshoresikkerhedsloven)
- Klima- og Energiministeriet
- BEK nr 509 af 25/05/2011 - Gældende
- Bekendtgørelse om
<table>
<thead>
<tr>
<th>Udvidelse af anvendelsesområdet for offshoresikkerhedsloven</th>
</tr>
</thead>
<tbody>
<tr>
<td>Klima- og Energiministeriet</td>
</tr>
<tr>
<td>BEK nr 1501 af 15/12/2010 - Gældende</td>
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<tr>
<td>Bekendtgørelse om beredskab m.v. på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>Klima- og Energiministeriet</td>
</tr>
<tr>
<td>BEK nr 1482 af 14/12/2010 - Gældende</td>
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<tr>
<td>Bekendtgørelse om drift m.v. af offshoreanlæg m.v.</td>
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<td>Klima- og Energiministeriet</td>
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<tr>
<td>BEK nr 1481 af 14/12/2010 - Gældende</td>
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<tr>
<td>Bekendtgørelse om mobile offshoreanlæg, m.v.: Konstruktion, indretning og udstyr</td>
</tr>
<tr>
<td>Klima- og Energiministeriet</td>
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<tr>
<td>BEK nr 1480 af 14/12/2010 - Gældende</td>
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<tr>
<td>Bekendtgørelse om faste offshoreanlægs og rørledningers konstruktion, indretning og udstyr</td>
</tr>
<tr>
<td>Klima- og Energiministeriet</td>
</tr>
<tr>
<td>BEK nr 729 af 03/07/2009 - Gældende</td>
</tr>
<tr>
<td>Bekendtgørelse om styring af sikkerhed og sundhed på offshoreanlæg</td>
</tr>
<tr>
<td>Klima- og Energiministeriet</td>
</tr>
<tr>
<td>BEK nr 644 af 25/06/2008 - Gældende</td>
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<tr>
<td>Bekendtgørelse om registrering og anmeldelse af arbejdsskade m.v. i medfør af offshoresikkerhedsloven</td>
</tr>
<tr>
<td>Klima- og Energiministeriet</td>
</tr>
</tbody>
</table>
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:
The directive implementation is part of the Offshore Safety act and associated orders hence it is implemented as part of the wider legislative framework.

Sources of evidence:
Pls refer to the quoted legislation in q12, and the appended list (at the end of the questionnaire).

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
Generally, both are covered, but the greatest effort is required for the prevention of major accident events, given that any changes that any substantial change/any change that can affect the major accident event risk level requires resubmission of the SSR and re-approval by the authority.

Statistics are focussed on both occupational safety (LTIs etc.) and MAH precursors (releases/spills).

The general approach is that the level of safety should be equivalent to the level of safety in society at large, and should be improved in accordance with technological and societal developments and expectations.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
The approach is goal setting, not prescriptive, placing the onus of documenting ALARP and justifying continued operation on the commercial entity, not the regulator.

Norwegian practice is more prescriptive as a result of the Norsok Standards which are the de-facto industry approach used (and are difficult to depart from).

Sources of evidence:
https://www.retsinformation.dk/Forms/R0710.aspx?id=22521
Chapter 1, §1.2

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:
The “order on safety and health work on mobile offshore drilling units” requires the commercial entity to engage the workforce, and for the workforce to drive safety and health related work on board, including HSE case updates. There are other provisions within the national legislation that independently and cumulative help to develop a safety culture. For example training requirements and the tri-partite consultation model.

Training is required by law, and the reporting systems applied on board does not require the employee to report names.

Also, there is a whistle blower system in place where anonymous reports can be made on any aspects that may be a cause of grievance.

Sources of evidence:
https://www.retsinformation.dk/Forms/R0710.aspx?id=135098
17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: 
In no position to tell.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

   a. What non-legislative guidance is available (if any)?

   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:
The DEA issues guidance on the interpretation of the legislative requirements. Further, the IADC guidelines are applied when building an HSE case. Inspiration is also taken from industry initiatives in the UK & Norway (NORSOK, OLF, Step Change, OGP)
The guidance in Denmark is compiled with tripartite input (as the acts and orders) to ensure that the needs of employees, employers and authorities are covered.
Guidance pamphlets on some issues are also compiled between employees and employers.

Sources of evidence:

V.6.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:
“Normal” situations would be situations of job hazards which are manageable within standard operational boundaries, whereas “critical” situations would be situations of an elevated risk level (i.e. for instance one or more safety critical elements having impaired integrity)

Critical situations could be:

- Deterioration of structural integrity
- Uncontrolled overrides/disabled safety critical equipment
- Well control situations
- Severe weather approaching design envelope

i.e. any situation that may entail the risk of developing into an MAE. The definition of an MAE is equivalent to the UK definition.

“Normal” situations would be situations with a risk level manageable through our standard operational processes, including permits, safe job analysis etc. “Critical” situations would

Sources of evidence:
https://www.retsinformation.dk/Forms/R0710.aspx?id=126034
Risiko for større ulykker
generally be situations where the risk level is elevated beyond the broadly acceptable risk band.

The offshore safety has a focus on the identification, analysis and assessment of MAHs. This is valid for all of the sectors we operate in, and in our HSE cases, based on initial HazIds/Bow Tie analyses/FMEAs etc., major hazards are identified and analysed further, to eventually enable an ALARP justification.

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

It covers assist vessels to the extent that they are interacting with and connected to the hydrocarbon activity. When this is not the case, they are covered by marine transportation laws.

Towing/loss of control in transit are, though, covered in the analyses supporting the HSE case.

In general, transit of a drilling rig is governed by maritime law; when on jacked-up or within the 500m exclusion zone (of an operational facility) and conducting Oil and Gas related activity then the O.S.A applies.

As the DEA is not the resort authority for maritime operations, would not believe that it would be a practical approach to have this to be part of the OSA. Requirements for helicopter evacuation and rescue at sea are, however, set.

Sources of evidence:

Example HSE case can be submitted if so required

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

Stand by vessels are covered to the extent that they interact with the hydrocarbon activity. All life cycle stages are covered by the law.

Standby vessel interactions are, however, described in the background analyses to the HSE case.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

Do not believe that any of these activities are relevant in DK. MD does not have any such activities.

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

MD is not a stakeholder to any such activities.

Sources of evidence:
24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

| Divers are covered, as are accommodation vessels. Risk to employees through the transportation of workers is to be assessed in the studies underpinning the HSE case and are covered by the CAA and DMA legislation. |
| Sources of evidence: |
| NB Transport to and from the drilling rigs (via helicopter or ship) are not commissioned or arranged by the drilling contractor but by the contracting party (i.e. the Company or Operator). |

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

| Licensee means the company or group of firms that are allowed for the exploration and production (extraction) of oil under the subsoil act. |
| Sources of evidence: |
| Operator is the company that the licensee’s behalf carry exploration and production of hydrocarbons. |
| Entity responsible for operations is the company responsible for the daily operation of an offshore installation. |
| Contractor is defined as a company that performs work for another company. |
| The employer is the entity that has power of direction for employees who perform work on offshore installations. |
| All activities conducted by sub-contractors or other parties on a Maersk Rig are coordinated and conducted under Maersk’s management system. |
| In critical situations, the OIM has clear responsibility for safety of the rig. |

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

| a. What is the definition in the relevant legislation? |
| b. How do stakeholders understand this criterion? |

Response:

| A change in the level of risk of MAEs would be a major change. A change affecting the functionality or effectiveness of SCEs could also be a change that requires handling via the MoC process. MAEs being defined as in the UK legislation: |
| Sources of evidence: |
| a. Fire, explosion or release of a hazardous substance that causes death or serious injury. |
| b. An incident that causes serious damage to the offshore facility or portion thereof with immediate danger of death or serious injury. |
| c. Collision of a helicopter with an offshore installation or |
| d. Any other event that results in death or serious injury of five or more persons. |
| In MD, the approach is risk based, i.e. based on the initial screening of an activity against our risk matrix, the level of assessment, rigor of scrutiny and authorisation will be |

Sources of evidence:

| MoC process could be submitted if so required | http://www.ens.dk/da-DK/UndergrundOgForsynin g/Olie_og_gas/Sikkerhed_o g_sundhed/regler/OSL2011/ Documents/LS2011_09d%2 0Sammenskrivning%20af% 20Offshoresikkerhedsloven. pdf §4 |

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
Floaters are ISM certified, the organisation is ISO 14001 certified, further, internal audits are conducted annually. Documentation changes are to be reviewed and authorised by the process owner through the revision process. Reviewers are determined in the revision process.
The system complies with the principles of ISO 9001 and OHSAS18001, but is only certified to ISO 14001.
External 3rd parties are involved when required (for verification activities)
Verification activity is also done internally (via another department – (the operations support team) which is completely independent from the rig teams (both teams have different reporting lines).

Sources of evidence:
Compliance matrices/certificates could be submitted if so required.

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
Yes, in Denmark (and the other countries we operate in), the HSE case is subject to review by the regulator (both the Danish Energy Authority and the Danish Maritime Authority).
The review process is not an approval scheme. However, the regulator acknowledges receipt and does comment on the contents. Consolidated comments from both the DMA and DEA are received in one go.
The regulator also reserves the right to issue notices etc. They also conduct inspections— Hardware and management systems—to confirm compliance with the HSE case.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
The legislation sets requirements for emergency response. External response is, though normally arranged by the operator, and thus not something we would normally deal with.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
This is captured in
- Bekendtgørelse om mobile offshoreanlæg, m.v.: Konstruktion, indretning og udstyr.
Nursing mothers and handicapped workers are, though, not personnel groups frequently found on a MODU, but it is generally accepted that the statement needs to be captured.
In general, see the regulations as neutral to all parties and not discrimination towards any

Sources of evidence:
V.6.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response: Enforcement is partly via the DEA and DMA (for maritime issues), partly via the police. Unaware as to whether there are any differences (between offshore, as we only have offshore drilling.

Design notifications are not required for MODU’s (as seen to be covered by Maritime law); however other notifications are required.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response: It is effective, practical and successful. Believe that statistics on unplanned releases etc. document that the O.S.A. has been effective. It has also created greater ownership and responsibility for own safety performance within the commercial entities.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response: During transport – the heli-co/client. During stay on board, MD.

Sources of evidence:

V.6.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response: Performance has significantly improved (see previously quoted stats), and while it has taken some time for the commercial entities to understand the requirement for continuous improvement without being prescribed “how to”, the OSA and equivalent acts in other countries we operate in has greatly heightened safety awareness, preoccupation with failure and ownership & responsibility for safety (given that inadequate legislation cannot be “blamed” for inadequate safety).

Sources of evidence:
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

   **Response:**

   *Please see previously quoted statistics.*

   *Statistics would be the most obvious objective measure.*

   *From the countries we operate in in the EU, would rate the UK as no. 1, Norway as no. 2, and Denmark as no. 3.*

   **Sources of evidence:**

   *No source – perception based on movement of units to the CS in question.*

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   **Response:**

   *The OSA itself has greater impact on offshore safety than the directive. One of the most significant achievements is to have goal setting legislation and a SSR/safety case regime, which was implemented anyway (as it is considered best practice in offshore drilling).*

   *Our management system requires us to have an HSE case in place regardless of legislative requirements. As MODUs are designed and constructed in accordance with maritime legislation, most of the requirements in the directive are redundant for mobile units, given that international and flag state requirements already stipulate these.*

   *The clause on well control does not impose anything that a prudent contractor would not already have seen to. Loss of well control is the dominant risk for a MODU, and no contractor would consider drilling without well control equipment in place and in a condition to control anticipated conditions in the well bore.*

   *So the answer to a) is no. The OSA is effective, with or without the directive.*

   *In countries where national legislation is less well compiled, believe that the directive could have a beneficial impact.*

   **Sources of evidence:**

37. Please mention any other relevant issues from the practical application of the relevant legislation:

   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?
Response:

a. Goal setting legislation always requires a change of mind-set. Depth of analysis of dimensioning scenarios can also be a cause for dispute.

b. Higher preoccupation with failure within the organisation, increased ownership and focus on improvement- vs. compliance culture.

c. Striking the right balance between occupational safety and barrier management/process safety can be difficult.

d. Cannot answer this question.

e. While the work force is ageing, the MD age structural profile is still younger than industry average. Employee retention is always a challenge.

Sources of evidence:

V.6.8 Evaluation

38. Are changes needed in the relevant legislation in your country?

a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?

b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?

d. Otherwise, what changes are needed?

Response:

a & b. Yes, but would like more emphasis on MAH as these are key.

c. Internally in the company, we apply the HSE guidance on risk acceptance criteria. No specific guidance on RAC has been provided by the DEA. This may well be WIP, following the ALARP discussions.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?

a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?

b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the directive specify adequate minimum safety and health requirements?

d. Is it consistently interpreted among the Member States?

e. Is the directive free of other significant gaps?

f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?

g. Otherwise, what changes are needed?

Response:

For countries with little offshore experience, where legislation may not stipulate adequate requirements, would believe yes. In countries such as the UK, Norway and DK, believe the national legislation could adequately cover this.

Sources of evidence:
Unsure as to how consistent interpretation is.

Believe that if anything should be added in terms of EU legislation, then this should be a higher focus on MAE in the directive, and not adding another regulation that overlaps with regards to both scope and documentation requirements.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: Unable to answer.

V.6.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: Cannot answer this question.

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: Cannot answer this question.
## V.6.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry-specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Given that the most significant oil &amp; gas producers already have rigorous and well implemented legislation, a regulation could cause a number of significant complications.</td>
<td></td>
</tr>
<tr>
<td>A directive would provide a minimum baseline for countries less mature, and would leave the countries with fully functional legislation to implement requirements into the existing acts.</td>
<td></td>
</tr>
<tr>
<td>Adding another layer of legislation that does not leave room for national implementation is likely to be disruptive and have potential to conflict with existing nomenclature, requirements, deadlines and expertise.</td>
<td></td>
</tr>
<tr>
<td>We firmly believe that a directive would provide the best solution.</td>
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</table>

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
<tbody>
<tr>
<td>The regulators forum (similar to the NSOAF) for best practices sharing would be a valuable vehicle for improvement.</td>
<td></td>
</tr>
</tbody>
</table>

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Except for the Barents Sea and very few other areas, believe the relevant areas in the categories mentioned are out with the jurisdiction of the EC?</td>
<td></td>
</tr>
</tbody>
</table>
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:
Guidance from the regulator w.r.t. the implementation and application of legislation is always highly appreciated and very useful for the development of effective, risk informed (and compliant) systems.

Sources of evidence:

V.6.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:
No response.

Sources of evidence:

V.6.12 Attached Information

<table>
<thead>
<tr>
<th>Nr.</th>
<th>Titel</th>
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</thead>
<tbody>
<tr>
<td>11</td>
<td>Bekendtgørelse om identifikation og udpegning af europæisk kritisk infrastruktur på energiområdet og vurdering af behovet for bedre beskyttelse (EPCIP-direktivet)</td>
</tr>
<tr>
<td>1672</td>
<td>Bekendtgørelse om Energistyrelsens opgaver og beføjelser</td>
</tr>
<tr>
<td>1509</td>
<td>Bekendtgørelse om visse aspekter i forbindelse med tilrettelæggelsen af arbejdstiden på offshoreanlæg</td>
</tr>
<tr>
<td>1508</td>
<td>Bekendtgørelse om særlige pligter for fremstillere, leverandører og importører m.v. af stoffer og materialer til brug på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>1507</td>
<td>Bekendtgørelse om ophævelse af bekendtgørelse om visse bestemmelser udstedt i medfør af lov om visse havanlæg og lov om arbejdsmiljø, der med visse ændringer finder anvendelse i medfør af offshoresikkerhedsloven</td>
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<tr>
<td>1506</td>
<td>Bekendtgørelse om sikkerhedsgruppens arbejdsmiljøuddannelse på offshoreanlæg</td>
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<tr>
<td>1505</td>
<td>Bekendtgørelse om sikkerheds- og sundhedsarbejde på mobile offshoreanlæg</td>
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<tr>
<td>1504</td>
<td>Bekendtgørelse om sikkerheds- og sundhedsarbejde på faste offshoreanlæg</td>
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<tr>
<td>Number</td>
<td>Description</td>
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</tr>
<tr>
<td>1503</td>
<td>Bekendtgørelse om forretningsorden for Offshoresikkerhedsrådet</td>
</tr>
<tr>
<td>1502</td>
<td>Bekendtgørelse om anvendelse af stoffer og materialer (kemiske agenser) på offshoreanlæg m.v.</td>
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<tr>
<td>1501</td>
<td>Bekendtgørelse om beredskab m.v. på offshoreanlæg m.v.</td>
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<tr>
<td>1482</td>
<td>Bekendtgørelse om drift m.v. af offshoreanlæg m.v.</td>
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<tr>
<td>1481</td>
<td>Bekendtgørelse om mobile offshoreanlæg, m.v.: Konstruktion, indretning og udstyr</td>
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<tr>
<td>1480</td>
<td>Bekendtgørelse om faste offshoreanlægs og rørledningers konstruktion, indretning og udstyr</td>
</tr>
<tr>
<td>672</td>
<td>Bekendtgørelse om sikkerhedsskilting og anden form for signalgivning på offshoreanlæg</td>
</tr>
<tr>
<td>392</td>
<td>Bekendtgørelse om beskyttelse mod risici ved udsættelse for kunstig optisk stråling på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>729</td>
<td>Bekendtgørelse om styring af sikkerhed og sundhed på offshoreanlæg</td>
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<tr>
<td>602</td>
<td>Bekendtgørelse om beskyttelse mod støjbelastning på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>199</td>
<td>Bekendtgørelse om beskyttelse mod udsættelse for biologiske agenser på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>1080</td>
<td>Bekendtgørelse om anerkendelse af erhvervsmæssige kvalifikationer erhvervet i udlandet vedrørende arbejde på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>644</td>
<td>Bekendtgørelse om registrering og anmeldelse af arbejdsomfattning m.v. i medfør af offshoresikkerhedsloven</td>
</tr>
<tr>
<td>556</td>
<td>Bekendtgørelse om udveksling af oplysninger i forbindelse med udsendelse af tjenesteydelser på offshoreanlæg m.v. i et andet land end etableringslandet</td>
</tr>
<tr>
<td>399</td>
<td>Bekendtgørelse om lægelig kontrol med arbejde med ioniserende stråling på offshoreanlæg</td>
</tr>
<tr>
<td>398</td>
<td>Bekendtgørelse om anvendelse af personlige værnemidler på offshoreanlæg</td>
</tr>
<tr>
<td>397</td>
<td>Bekendtgørelse om arbejde ved skærmterminaler på offshoreanlæg</td>
</tr>
<tr>
<td>395</td>
<td>Bekendtgørelse om manuel håndtering af byrder på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>394</td>
<td>Bekendtgørelse om beskyttelse mod udsættelse for vibrationer på offshoreanlæg m.v.</td>
</tr>
<tr>
<td>1186</td>
<td>Bekendtgørelse om udvidelse af anvendelsesområdet for offshoresikkerhedsloven</td>
</tr>
<tr>
<td>1184</td>
<td>Bekendtgørelse om forretningsorden for Myndighedernes Beredskabskomité i medfør af offshoresikkerhedsloven</td>
</tr>
</tbody>
</table>
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling
V.7. NOTES FROM INTERVIEW WITH:

Union
Dansk Metal

from

Denmark
V.7.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Dansk Metal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Union</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/county in which your organisation operates:</td>
<td>Denmark</td>
</tr>
</tbody>
</table>

V.7.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO2 injection, CCS and fracking?

   Response:  
   *N/A. The interview started at Question 6.*

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response:  
   *N/A. The interview started at Question 6.*

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response:  
   *N/A. The interview started at Question 6.*
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A. The interview started at Question 6.</td>
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</table>

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A. The interview started at Question 6.</td>
<td></td>
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</tbody>
</table>

### V.7.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.
b. How many exploration & development wells drilled annually, and expected trends?
c. How much oil & gas production annually, and expected trends?
d. Extent and plans for other “extraction through drilling activities”.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The official report developed by the regulator will contain the required data. Please consult this.</td>
<td></td>
</tr>
<tr>
<td>NB The unions are represented in the council, hence will have been involved in the development of the official report (review etc.). Contents of the report considered to be wanting will have been made subject to challenge.</td>
<td></td>
</tr>
</tbody>
</table>

7. What is the balance of activity between offshore and onshore industries in your country?

a. Proportions of exploration & development wells drilled onshore and offshore.
b. Proportions of oil & gas production onshore and offshore.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most Oil and Gas related activity is predominantly offshore. Activity onshore is very limited (exploratory drilling only). From the point of view of the State, the Oil and Gas industry is of significance to the Danish economy. However, the small number of personnel involved (~ 3000; of which 25 to 30% are employed directly and the others are contractors) in the sector is such that the sector is dominated by other industries and is thus not a key focal point for the Unions.</td>
<td></td>
</tr>
</tbody>
</table>
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

All private sectors. Key players are Maersk, Hess and DONG.
- Maersk has of the order of 50 platforms
- DONG has 1 – 2 platforms
H is responsible for just one platform.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

a. Trend (and number) of fatalities over the last 10 years.


c. Number of injuries in the most recent year.

d. Number of people employed.

e. Please provide data sources (if available).

Response:

Consult the official report. There have been 2 fatalities in the last 10 years, one of which was as a result of a dropped object.

The statistics show that the risk to offshore workers is lower than that in other industries. The reported data also includes records of near misses. A single system (the labour inspectorate system) is used to collate all safety related statistics across all industries. The data for other industries is available online from the labour inspection website.

The quality of the data within the system is understood to be of a high standard/quality, especially from the platforms. Most of the incidents that occur are reported; nevertheless there are some that go unreported. Within the reported data, LTI’s use one day as a basis as opposed to 3 days.

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

Global incidents within the industry serve as learning opportunities.

The Macando incident has led to changes in the SMS of organisations. So far, no changes to the regulations are suggested / recommended as they have been evaluated to be robust, sufficient and fit for purpose.

The latest change to the regulations (which involved a move from prescriptive to a goal based approach) occurred in 2006. This change is seen as enabling the system to be more flexible to change (i.e. responsive to changes in the regulatory environment). It is also seen as enabling a departure from a compliance culture (with regard to risk management) to one of ownership and understanding.

In the previous prescriptive regime, where they were issues with the regulations (e.g. conflicts etc.), they were brushed aside. The new goal setting approach places full responsibility for all risks and hence broadens the scope of application.

With the goal setting approach, the acceptable level of safety is set by the operators in...
concert with the regulator. The ALARP concept plays a key role in this regard and there has been a lot of debate/discussion on the concept and there are disparate understandings of the concept within the industry.

This change is still on-going and a steep learning curve in the early transitional period. As experience develops in its application, the situation is getting better; the organisations have a better understanding of what is required of them. The tri-partite discussions also play a key role in continuous improvement/the learning loop.

The most recent fatality (of the two highlighted in Question 9) occurred on a facility undertaking some drilling work (operated by DONG). Maersk was the drilling contractor and Schlumberger were contracted to provide support services. The investigation concluded that the systems in place with regards to the law and the management system were adequate; the key issue was in the implementation gap. Three legal provisions were broken and all 3 companies were found culpable.

Incidents and associated learning’s are discussed at the meetings organised by the offshore safety council (held four times a year). At the meetings, operators share information on what incidents have occurred on their respective facilities. The operators have a good record of sharing information/cooperating on safety related issues.

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:

The primary occupational illness issues of concern are:
- Noise (from helicopters, turbines, pumps etc.)
- Skin allergies related to handling chemicals
- Musculoskeletal disorders due to construction activity

Instances of the above (or any other occupational related illness are reported together with all other accident data.).

The data can be erroneous as it is particularly hard to establish causation. For example, contractors account for more than 50% of the workforce. They typically have a number of jobs/work in different locations hence it is difficult to identify the exact source of the illness.

Another area of concern is the mental/psychological effects of working offshore. As with the above, causation is also difficult to ascertain.

Some initiatives to improve the quality of the reporting process are planned

V.7.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

Response: 
All the provisions of the directive have been strictly transposed and implemented into Danish national legislation (consult the regulator for more specific details). Some of the provisions are also incorporated within collective agreements (which apply between employees and employers. NB This is in addition to the transposition that applies to Danish national legislation.)

The provisions of the directive already existed in the Danish legislation prior to its promulgation. However, the transposition of the directive helped to further develop and clarify the contents as well as to ensure consistency and help cultivate a level playing field [in Europe].

Working group meetings (as a tri-partite) are held regularly (typically once a month) to discuss changes in the regulatory environment. Such meetings were held following the promulgation of the directive. More recently, the proposed offshore legislation has been a key focus of this group and the meeting frequency has increased to being weekly (as opposed to monthly).

The working group also develops guidelines to supplement the various regulations (executive orders etc.) Not always tripartite. In some cases, the guidelines can be developed on a bi-party basis (involving just the workforce and industry) and then ratified by the regulator. (NB A response developed by the regulator alone can be perceived to result in a solution that is too technical and does not address the very real practical issues on ground. Hence, there is some pressure on the bi-party group to develop a response that meets both requirements). A guideline on noise is one of the most significant publications made by the bi-party group till date.

Issues relating to accommodation are also a key focal point. For example guidance is being developed on applying accommodation provisions within the law (1 person per cabin) to old facilities (designed for 2 in a cabin). The issue of accommodation is particularly key where development activity (e.g. upgrades etc.) require an increase in workforce and thus raises questions as to how best to accommodate the increase in workforce (e.g. via flotels etc.).

The unions have a legal interest/responsibility when incidents occur. They play an active role and have a legal right to take part; join the incident investigation team; request and review relevant and pertinent documentation (also helped by the Freedom of Information Act).

Sources of evidence:

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: 
See response to Question 12.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: 
All hazards types (i.e. Major accident hazards, Occupational H&S and Occupational Illness are equally covered).

Sources of evidence:
15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:

*The national legislation adopts both approaches. For example noise limits are prescriptive (at 85db).*

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

*The tri-partite discussion (raised in previous responses) is a key element that helps to develop a safety culture. This fosters cooperation and enables knowledge sharing (which is not legislated for).*

*The discussion in the aftermath of DWH showed that the regulations were adequate but a lot more could be done to improve compliance. “Behaviour and Culture” programmes are seen as a key way of doing so; hence most organisations have put them on the agenda. They are also seen as a way of further reducing the levels of safety achieved, which are currently on a plateau (as evidenced by the available statistics).*

*A lot of emphasis is also being placed on the role of leadership on the platforms (i.e. the OIM’s). Here, the key focus is on getting them to “walk the talk” i.e. ensuring compliance. Regulations can be the best in the world, but if they are not implemented than they amount to nothing.*

*Company reputation in the public domain is also seen to be one key area that drives organisations to promote and maintain safe behaviours and cultures.*

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:

*See response to Question 8.*

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

*There are various guidelines available that address the various hazard types. Some of these are developed by the onshore bi-party team, but are also applicable offshore. Funding (partial or full) for the development of the onshore guidelines (as solution to working environment problems) is provided by the government (via the Ministry of Employment). Offshore activity is regulated by a different ministry (Ministry of Energy); hence the same*
V.7.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

“Special sources” of hazard are those that result in the deployment of the platforms EER’s system. Under this definition, only major accident hazards will be seen as special sources.

For evacuation purposes, the previous prescriptive legislation (now repealed) required 200% capacity for lifeboats/escape provisions irrespective of the context and more importantly the location of the lifeboats relative to the hazard was not a key consideration. In reality, more or less might be needed and the location relative to the hazard is key.

Currently, the EER provisions are to be based on a risk assessment which is reviewed by the safety rep. When there is an increase in the number of personnel on board, the risk assessment is updated. A high frequency of changes can mean that the risk assessment is updated frequently; hence the typical approach is to design the facility for a maximum number of expected personnel.

Critical is used in the situational context and understood to reflect emergency situations i.e. when a major hazard is occurring or a situations that if escalated could develop into a major hazard.

NB There are rules that stipulate what needs to be reported to the regulator. Under these protocols, all near misses have to be reported.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

When a floating facility is fixed to the well, it comes under the Danish Legislation. When in transit, maritime law applies.

Activities conducted in relation to the operation of the facility (fixed or floating) are covered e.g. lifts, pipe-laying.

In terms of lifecycle activities, the regulations cover the initial planning stage all the way to decommissioning activities.

Sources of evidence:
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
<tbody>
<tr>
<td><em>See response to Question 20.</em></td>
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</tbody>
</table>

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>It is understood that activities involving hydrocarbons will be covered (confirm this with the Regulator).</em></td>
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</tbody>
</table>

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO\textsubscript{2} capture and storage)?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><em>See response to Question 22.</em></td>
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</table>

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>The workplace is not defined as a physical location but rather is understood to reflect the activity (ies) undertaken by the employer. Under this definition, travel to an offshore facility via helicopter is paid for and hence the helicopter is taken to be one of many working locations. The same principle applies to diving and other activity that does not take place directly on the facility. Onshore, the workplace will generally be taken as the limits of the site boundary.</em></td>
<td></td>
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</table>

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
<tbody>
<tr>
<td><em>With the increasingly fragmented and complex arrangements of contractors/sub-contractors, this issue is one that is frequently raised and discussed. In the eyes of the law, the operator is taken as the party responsible for the platform (i.e. the employer). NB The licensee does not play an active role.</em></td>
<td></td>
</tr>
</tbody>
</table>
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major changes include:</td>
<td></td>
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<tr>
<td>- Changes to the design basis of the installations that has impact on the risk profile (increase or decrease) e.g. physical changes</td>
<td></td>
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<tr>
<td>- Organisational changes</td>
<td></td>
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<tr>
<td>- Changes in capacity</td>
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<tr>
<td>- Changes that result in a revision to the EER plan</td>
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</table>

The regulator has to be notified of all such changes and they have been to be reflected in the H&S case and submitted to the regulator. The updated H&S case also has to be submitted approved by the H&S council. The safety reps recommend/agree to the updates but do not approve.

**NB**
1. An update to the H&S case is not always required as long as not doing so can be justified.
2. The above process is legislated for via a change management process.

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or subject to independent / peer review? If so, how is this achieved?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Generally covered by internal organisational quality management systems. Independent third party independent review (e.g. the EER analysis) is required in some areas.</td>
<td></td>
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</tbody>
</table>

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
<tbody>
<tr>
<td>Yes, the regulator will review and make comments on the H&amp;S case.</td>
<td></td>
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</table>

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not under Directive 92/91/EEC but under other regulations.</td>
<td></td>
</tr>
</tbody>
</table>
30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

The law is neutral and does not discriminate in any way. All the provisions within the directive are implemented (e.g. separate bathing requirements etc.)

A health certificate is required for all employees that work offshore. Some see the certificate as a barrier to employment as those who do not pass the test can lose their employment, pensions etc.


V.7.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

a. Every platform is visited once annually. Inspections of this type are announced. Unexpected (more akin to limited notice) inspections are also conducted as a result of whistle-blowing (e.g. from the safety reps).

The safety committee of the operator will be made up of safety reps from the workforce (who are elected) and company representative (who are appointed). Sub-contractors can also the make-up of either side. NB there is an executive order dedicated to how safety activities should be organised. The order sets out minimum requirements. There are plans to develop a guideline to this executive order.

b. The regulators review the safety case.

c. Periodical notifications are required for drilling related activity i.e. a report on drilling activities.


32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

Enforcement and inspection activity related to offshore is more successful in comparison to onshore activity (where inspections take place more infrequently ~ once every seven years.)

The introduction of the goal-setting regime has meant that the quality of inspection activity is dependent on the capability of the inspectors. As a result, there is a need to improve the consistency in enforcement amongst inspectors (say via education).

NB

1. The level of turnover is very low within the offshore regulator (the DEA), especially in comparison to other industries (e.g. onshore).

2. Offshore, the same regulators that review the safety case are also those that inspect.

3. The DEA is remunerated for the costs incurred as a result of inspection activity.
33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
There is joint responsibility between the operator and the DEA. The DEA has a responsibility as an employer whilst the operator is responsible for ensuring his/her safety during the inspection. The regulator has to comply with the

Sources of evidence:

V.7.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
Currently, the current regime is effective; safety levels can be expected to drop if the regulations/regime are removed or repealed. Going forward, the goal-setting approach, the tri-partite discussions and ALARP are key to ensuring rapid continuous development. This is a key advantage of having a less prescriptive approach. Society is always changing and developing along both social and technological dimensions. The goal-setting approach ensures that activity/practice changes to reflect these transformations.

Other key elements of the successful regime include:
1. Inspection activity. Compliance with regulatory activity needs to be assured.
2. The industries involved need to act responsibly.
3. Placing emphasis on process/technical safety issues and hazards.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
In a global context, Denmark is considered to be a high performer and comparable with other North Sea regimes.

The high standards in the North sea stem from the close communication/cooperation that exists between the countries which is manifest via initiatives such as NSOAF (for regulators); OGP (Industry) and the European trade unions (the workforce).

Sources of evidence:
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?

b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

The directive is instrumental and helped in the development and structuring of the Danish Legislation. See response to Question 12.

The directive approach is key in this regard as it allows the flexibility to merge/incorporate provisions into existing legislation that is a good fit with the prevailing cultural and legal system.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:

a. Any notable difficulties in the practical application?

b. Any unexpected positive effects?

c. Any unintended (or unexpected) negative effects?

d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?

e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

The tri-partite system adopted for the development of regulations in Denmark is particularly important. It helps to ensure all issues are raised and addressed/ironed out beforehand so that there are no surprises. All parties are on board and privy to the discussions/work going on.

It also makes implementation easier and enables a departure from traditional compliance culture to a culture of partnership. As a result standards are higher than what would be expected under a compliance regime.

In instances where the regulations are perceived to have a negative impact, the tri-partite model has enabled discussions to be had and approaches developed to overcome any barriers.

All of the above would not be achievable under a top-down model.

The situation with regards to SME’s is mixed. On the one hand, it helps to drive/improve performance (driven by the need to comply with the management system/requirements of larger organisations) and thus opens up a world of business opportunities. On the other hand, meeting such requirements can be quite difficult. For example, the level of compliance activity, especially with regard to documentation can be overwhelming.

Sources of evidence:
V.7.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

   Response: Initiatives targeted at improving behaviour/culture in the workplace would be welcome. However, whether this should be driven by legislation is debateable.

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

   Response: See response to Question 38.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response: N/A
V.7.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
See response to Question 37. The tri-partite system is instrumental in reducing the administrative burden as all changes are discussed by all the social partners and an acceptable solution is realised from these discussions. The burden is not seen to be disproportionate.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
N/A

Sources of evidence:

V.7.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:
A directive approach is the preferred option for reasons outlined in Question 12 and Question 36 (largely flexibility to fit with existing legislative framework and culture.)

A key issue is the nullifying impact a regulation would have on the tri-partite process as outlined in Question 37. The benefits that accrue from the tri-partite process would not be realised. Furthermore, a regulation (which is top-down) would go against the grain of the tri-partite working practice in Denmark (which is more consultative via social partners). The tri-partite process is key to the regime in Denmark and a regulation would have
44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

*The operators are a key element in ensuring, maintaining and driving safety standards, especially as they tend to work across geographies. Nevertheless, legislation is key and it is important the legislation is robust.*

*There would be some benefit in taking the learning’s gained onshore offshore as some of the same issues are replicated i.e. onshore H&S issues also apply offshore.*

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

*Yes.*

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:

*The EU should continue to play a supportive role and one that affords the opportunity for MS to organise themselves and their legislation in ways that work for them. The key message here is that dialogue and flexibility is encouraged (and the directive approach allows for this) as opposed to a regulation.*

Sources of evidence:

V.7.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

*No response.*

Sources of evidence:
V.7.12 Attached Information

No further information.
V.8. NOTES FROM INTERVIEW WITH:

Regulator
Ministère de l’Ecologie, du Développement Durable, de l’Energie

from

France
V.8.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Ministère de l’Ecologie, du Développement Durable, de l’Energie</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Regulator</td>
</tr>
<tr>
<td>(e.g. Government/Regulator,</td>
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<tr>
<td>Trade association/Operator,</td>
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<tr>
<td>Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in</td>
<td>France</td>
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<tr>
<td>which your organisation</td>
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<tr>
<td>operates:</td>
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</table>

V.8.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response:

All regulation on H&S at work is included within what is known in France as the “code du travail” (which applies to all workers in general). Many of the provisions within Directive 92/91/EEC are included in the code.

The code is supplemented by specific items of legislation (known as decrees) that address issues specific to a particular industry/sector. There is a specific legislation for the mineral extraction industries (the Decree of 22 March 2000) and this transposes the requirements of Directive 92/91/EEC in more detail.

A complementary decree of the code of the environment to mining regulation has been published in December 2011 that requires the operator to submit an impact assessment prior to drilling (for well deeper than 100 meters). This impact assessment shall be also submitted to a public inquiry in order to improve the knowledge of stakeholders. These changes are applicable since the 1st of June 2012.

Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response:

The national legislation is comprehensive and covers all elements of the well related activity from design to closure. The activities covered include:

- Exploratory and production drilling (on/offshore)
- All types of drilling activity

Sources of evidence:
3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response:

Post Macondo, a lot of emphasis has been placed on ensuring safe operation as well as safeguarding the environment. A significant amount of work is being done in these two areas that is helping to inform France’s response to the incident. An example is the ongoing work by ISO TC 67, a technical committee of the international standards organisation whose terms of reference relate to the “Standardisation of the materials, equipment and offshore structures used in the drilling, production, transport by pipelines and processing of liquid and gaseous hydrocarbons within the petroleum, petrochemical and natural gas industries”. See http://www.iso.org/iso/iso_technical_committee?commid=49506

Scale of Activity

- Offshore Oil and Gas drilling activity
  
  At the current time, there is no offshore drilling in French waters within the geographical area of Europe (although there has been some activity in the past).

  There is some exploratory activity in waters (in the Northern Atlantic) off the coast French Guyana, an overseas sovereign territory of France located in South America.
Onshore Oil and Gas drilling activity.

There currently a number of onshore oil production activities both in France and in its overseas territories. In France, onshore activity produces approximately 1% of the Oil consumed/required.

Due to the limited level of Oil and gas related exploration and production activity, France can be classed as being relatively immature less experimented in comparison to other EU countries that have significantly higher levels of activity.

Actions taken Post-Macando

Following the Macando incident, concerns were raised regarding the offshore drilling operations in the French Guyana. This led to a decision to review the adequacy of the legislative provisions drawing in particular on the learning’s from the investigation reports that have been issued on the incident.

To ensure a thorough and impartial review, a public organisation with no links to the industry was commissioned to undertake the work.

The review concluded that though the existing national legislation provided good coverage there are some gaps that need to be addressed (largely relating to level of expertise required for drillers and the implementation of modern drilling techniques). The findings of the report are being used to as a basis for improving the French Legislation on drilling.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: See later responses.

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: Increasing opportunities for knowledge sharing between EU countries would be useful. Creating an outfit similar to NSOAF but covering the entirety of Europe is one of helping this. It is important that any such organisation is an informal as possible (NB this is why NSOAF works). Formalisation complicates things and makes people less reluctant to raise, share and discuss issues.

Pan-EU Stakeholder meetings.

Developing Guidelines on the directive.

V.8.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?
d. Extent and plans for other “extraction through drilling activities”.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>Oil and Gas drilling activity</strong></td>
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<tr>
<td><strong>In the French Guyana</strong></td>
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<tr>
<td>- A well was drilled last year</td>
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<tr>
<td>- Shell has plans to drill 4 wells in the coming years</td>
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<tr>
<td>- Other companies have asked licence to the minister in charge of mines in order to explore the area that is not already covered by the licence belonging to Shell</td>
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<tr>
<td><strong>In Metropolitan France</strong></td>
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<tr>
<td>- All onshore</td>
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<tr>
<td>- Around 40 wells are drilled per year (on average)</td>
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<tr>
<td>- Over 1000 wells have been drilled over time. A number of these are non-operational.</td>
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<tr>
<td>- Onshore wells produce around 1% of the oil consumed by France.</td>
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<tr>
<td><strong>Shale Gas</strong></td>
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<tr>
<td>Exploration and operation of shale gas by hydraulic fracture is currently banned</td>
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<tr>
<td><strong>7.</strong> What is the balance of activity between offshore and onshore industries in your country?</td>
<td></td>
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<tr>
<td>a. Proportions of exploration &amp; development wells drilled onshore and offshore.</td>
<td></td>
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<tr>
<td>b. Proportions of oil &amp; gas production onshore and offshore.</td>
<td></td>
</tr>
<tr>
<td>Response:</td>
<td>Sources of evidence:</td>
</tr>
<tr>
<td>Comparing the number of drilled onshore versus those drilled offshore in 2011 gives a ratio of 10:1. This is the current situation and is subject to change in the future.</td>
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<tr>
<td><strong>8.</strong> What is the balance of activity between private and public-sector exploration and production organisations in your country?</td>
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<tr>
<td>Response:</td>
<td>Sources of evidence:</td>
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<tr>
<td>All private sector.</td>
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<tr>
<td><strong>9.</strong> What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?</td>
<td></td>
</tr>
<tr>
<td>a. Trend (and number) of fatalities over the last 10 years.</td>
<td></td>
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<tr>
<td>c. Number of injuries in the most recent year.</td>
<td></td>
</tr>
<tr>
<td>d. Number of people employed.</td>
<td></td>
</tr>
<tr>
<td>e. Please provide data sources (if available).</td>
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</tbody>
</table>
Response:

*Twelve LTI’s were reported in 2011, together with a fatal accident (which occurred during production as opposed to drilling).*

**10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?**

Response:

*The national legislation is always developed taking into consideration feedback from various parties. This includes inspectors (a key element), scientific/technical organisations, NGO’s etc. Input from industry is also taken into account after the initial draft has been developed.*

*The need to focus on the improvement of the number and the efficiency of safety barriers and protective systems has been highlighted.*

**11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?**

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response:

*No data available.*

**V.8.4 Regulatory approach**

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

*See responses to earlier Questions 1 and 2.*

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:

*See responses to earlier Questions 1 and 2.*
### 14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

**Response:**

The national legislations requires that all hazards types are covered – Occ. H&S, Occ. Illness and Major Accident Hazards.

**Sources of evidence:**

### 15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

**Response:**

The legislation uses both. There are general requirements as well as more prescriptive elements (e.g. a requirement to have multiple barriers on a well).

There are also guidelines that outline what is required to ensure compliance with legislative provisions. Limited or no references to standards are made within these guidelines.

**Sources of evidence:**

### 16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

**Response:**

The following provisions’ are included within the “code du travail”:

- Workers must be adequately trained for both normal and emergency situations
- Workers must inform the operator of any issues/problems identified
- In the event of unsafe practices, workers have the authority to stop the activity being undertaken
- The employer must inform the workers of the hazards associated with their jobs
- A requirement to have a safety committee (where more than 20 employees are present)

Furthermore, work related issues (including safety considerations) are discussed at a cross-stakeholder (regulator, industry and union) forum/committee that is organised by the Ministry of Works. NB. The committee is also one of the parties that have been engaged with to provide input to the new regulations.

**Sources of evidence:**

### 17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

**Response:**

No response.

**Sources of evidence:**

### 18. What non-legislative guidance is used / available in your country?

- a. What non-legislative guidance is available (if any)?
- b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
- c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?
V.8.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

   a. The national legislation covers both acute and chronic hazards. In this context all hazards types are covered.

   NB The terminology used in the key EU legislation on safety in the major hazard industries (SEVESO, Directive 92/91/EEC and the proposed regulation) are all dissimilar. The EU should look at streamlining these terms as opposed to creating new ones.

   b. Yes

   c. The national legislations are not framed in terms of normal/critical situations but rather in terms of what has to be done to maintain a normal situation. There are requirements covering normal (i.e. operating) conditions as well as emergency ones.

Sources of evidence:

Source reference(s)

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

   Onshore
   - Within the site boundary.

   Offshore
   - In transit, maritime legislation applies (for floating facilities).
   - Whilst conducting drilling activity, the national legislation applies. The breakpoint is understood to apply from when the facility is in position and preparing to begin drilling.

   An exclusion zone around the facility is also defined.

Sources of evidence:

See response to Question 20.

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

Sources of evidence:
22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response: See earlier responses.

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response: See earlier responses.

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response: See earlier responses.

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response: In 2000, the operator and the employer have the same meaning under French law. From 2009, the employer is defined as the organisation that has the contract with the employee and the operator as the organisation who has been granted the drilling rights. The issue is somewhat further complicated because the code focuses on the employer; whilst the mining law focuses on the operator.

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response: A major change is defined as one that results in a change in working conditions (for example how the work is organised or a change in the rhythm of the work). The S&H document has to be updated to reflect this change.

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response: N/A
28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:

The S&H document is submitted and reviewed.
The content of the safety and health document is fixed by the decree of 22 March 2000. This document is being checked at each inspection.
Also see previous responses.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

They are not understood to be covered by the mining legislation but by other legislation.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

The legislation does not discriminate with regards to gender / handicapped workers. Some health provisions exist that workers need to fulfil.

Sources of evidence:

V.8.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

As noted earlier, the safety and health document has to be approved prior to commencement of production/operational activities. The regulator can request additional measures if the outlined ones are thought to be inadequate.

For exploration activity, there is a declaration process. From the 1st of June this will not apply to drilling activity over 100m and there will be an additional requirement to conduct an environmental impact assessment. As a result, multiple approvals will be required prior to initiating any work.

For operation activity, it is already required to conduct an environmental impact assessment.

Inspection activity

- Does not follow any pre-defined protocol.
- Have a pool of inspectors that have offshore expertise within the extractive industry.
- Four to five inspections were conducted last year for activities in the French Guyana.
32. During inspections, emphasis is placed on the safety health document with a view to establishing (amongst other things) that the barriers outlined in the document conform to what is actually installed.

33. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

No response given.

34. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

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<tr>
<th>Offshore</th>
<th>Onshore</th>
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<tr>
<td>When on the platform they are the responsibility of the facility operator and thus have to comply with the rules and policies that apply. It is not clear if the coverage extends to transport (i.e. travel by helicopter).</td>
<td>When on site.</td>
</tr>
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</table>

V.8.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

No response.

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:

No response.
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response: 
   No response.

   Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

   Response: 
   No response.

   Sources of evidence:

V.8.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

   Response: 
   No response.

   Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
d. Is it consistently interpreted among the Member States?
e. Is the directive free of other significant gaps?
f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
g. Otherwise, what changes are needed?

Response: No response.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: No response.

Sources of evidence:

V.8.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: Sees the current effort as proportional to the level of activity – hence the burden is acceptable. Any increase in drilling activity will need to be matched by an equivalent increase in regulatory resources.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: N/A

Sources of evidence:
**V.8.10 Future regulatory approach**

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

**Response:**

The time required to develop the expertise required to effectively administer the provisions of the directive is the key issue as opposed to the level of maturity. The time required to develop this expertise is thus the key element. A directive allows for this (via the transposition period).

A regulation will be a problem in immature countries as the expertise required will not be there, unless a transition period is given to the authorities to implement the content of the regulation.

**Sources of evidence:**

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

**Response:**

The time required to develop the expertise required to effectively administer the provisions of the directive is the key issue as opposed to the level of maturity. The time required to develop this expertise is thus the key element. A directive allows for this (via the transposition period).

A regulation will be a problem in immature countries as the expertise required will not be there, unless a transition period is given to the authorities to implement the content of the regulation.

**Sources of evidence:**

45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

**Response:**

The directive provides a platform upon which issues specific to certain environment can be developed. In this regard, the directive can be used in all locations.

One way of dealing with location specific issues to be mandate that these are addressed on a national basis. Another way would be to update the directive to account for the various locations (but this would be contrary to the goal it is trying to achieve and would be very challenging).

Soft regulation (i.e. guidelines) is a good way to resolve this dilemma. The EC should

**Sources of evidence:**
provide guidance documents to support the application of the directive in challenging environments.

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

   Response: Guidelines and exchange of best practices would be the way to increase the effectiveness of the directive.

V.8.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

   Response: No response.

V.8.12 Attached Information

No further information.
V.9. NOTES FROM INTERVIEW WITH:

Industry
Total

from

France
V.9.1 Demographic Questions

Organisation:
1) Emmanuel Garland / Exploration and Production / Hygiene, Safety and Environment Division / Senior Environmental Adviser / TOTAL
2) Isabelle Mouratille / Exploration and Production Team / TOTAL

Stakeholder type:
Operator

(e.g. Government/Regulator, Trade association/Operator, Union, NGO)

EU/EEA country/counties in which your organisation operates:
France

V.9.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning )?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response: N/A. Interview session started at Question 6.

Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response: N/A. Interview session started at Question 6.

Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response: N/A. Interview session started at Question 6.

Sources of evidence:
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: 
N/A. Interview session started at Question 6.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: 
N/A. Interview session started at Question 6.

Sources of evidence:

V.9.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: 
Most drilling related activity in France is onshore. There are a number of offshore opportunities, but these are limited and generally restricted to the French territory outside the EU (the French Guyana).
The smaller sized operators tend to dominate onshore drilling activity in France.

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?

   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: 
N/A

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: 
N/A

Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

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10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

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11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

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<td>No response.</td>
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V.9.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

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13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

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The directive has been implemented as part of the wider legislative framework.

The provisions are interspersed within three key items of legislation. Namely, the “Employment Code”, the “Environmental and Safety Code” and the “Mining Code”. NB Subsoil activity is primary of the “Mining Code”; above soil activities fall under the “Environmental and Safety Code”.

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: Both hazards types i.e. MAH and Occupational H&S (Personal safety) are covered. The former is governed by what is known as the “Environmental and Safety Code”; the latter by the “Employment Code”.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response: The guiding principle of French National legislation is goal-setting. However, the national legislation includes both approaches. Legacy provisions tend to be prescriptive; more recent ones are more likely to be goal oriented.

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response: The national legislation requires that employers:

- engage with the workforce
- ensure adequate training is provided for the job

In addition to the above, there are also provisions for anonymous reporting – drop box, letters, via the unions etc. The unions play a key role in ensuring safety and are often a first point of call for safety related issues. Issues reported to the unions are cascaded to the regulator and/or industry. NB The unions represent all employees irrespective of whether they are members or not.

Under “employment law”, a worker has the right to stop work and inform management of unsafe practices. This law also requires that a “worker representative/employee representative” is elected/appointed for workplaces with 25 or more people. The elected representative is also entitled to undergo the requisite training to enable him/her execute this role.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: N/A

Sources of evidence:
18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

In France, there are documents that aim to provide interpretation of legal provisions. These are known as “Circulair”.

They are a means by which the authorities explain how to achieve compliance with the law. There are a number of them and legally, they have no weight. Departures from the approaches proposed therein are allowed.

It is normal practice for operators to wholly conform to the particulars of the “Circulair”, largely because of the attitude/disposition of work inspectors who generally expect full compliance with them. Departures do occur, but these are rare and tend to happen with the more experienced inspectors.

There is also an organisation that represents the interest of the French Oil and Gas industry known as UFIP (similar to the UKOOA in the UK, NOGEPA in the Netherlands and OLF in Norway). They also provide some guidance documents. The body is currently being re-organised so as to improve the quality of its outputs.

Sources of evidence:

V.9.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. The term “special sources” of hazard is not explicitly used in the French National legislation.

b. Yes. Major hazards are covered separately in the Major hazards/risk assessment report known as “Et…..”.

What constitutes a Major Hazard is also defined in the national legislation. Please provide definition?

All occupation safety type risks to individual members of the workforce—from the activity they are involved in and at the specific location—will be assessed and documented in a document known as the “Document Unique”. This document does not cover MAH hazards.

What constitutes a Major Hazard is also defined in the national legislation. Please provide definition?

All occupation safety type risks to individual members of the workforce—from the activity they are involved in and at the specific location—will be assessed and documented in a document known as the “Document Unique”. This document does not cover MAH hazards.

What constitutes a Major Hazard is also defined in the national legislation. Please provide definition?

All occupation safety type risks to individual members of the workforce—from the activity they are involved in and at the specific location—will be assessed and documented in a document known as the “Document Unique”. This document does not cover MAH hazards.

V.9.5 Scope
20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

Onshore
The national legislation applies to activities on site.

Offshore
The scope of the national legislation extends to anything or activity directly linked to the exploration and extraction of hydrocarbons.

In the context of floating installations, there is a document developed by the IMO that sets out the interfaces/start/break points. As a general rule, the change point between IMO law and the National Legislation is understood to occur when the facility is on location. For a drilling facility about to drill a new well outside the vicinity of an existing facility, this would mean when it is jacked-up and anchored (for jack-up rigs) or dynamically positioned (for fully floating installations).

An exclusion zone also applies around the perimeter of an offshore installation. This zone also helps to define the scope of application of the National Legislation.

General
It is also noted that the scope of application is potentially much wider as the individual provisions of the directive, in some instances, have been implemented across statutes that are more far reaching. In this regard, the full extent/scope of the National Legislation is particularly difficult to establish.

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

As a general rule, multiple provisions will apply to each stage. In situations of overlap, the most onerous provisions apply. For example:

Construction activity will be covered by construction law.

Decommissioning activity will be covered by both mining and construction law.

Offshore Pipelines.
The situation with regards to offshore pipelines is somewhat complex. At present, it falls under the mining law. It is unclear the amount of coverage that applies.

Onshore Pipelines
There is better clarity here as there is a specific law covering pipelines; however the situation is still complex.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

All drilling activities are governed by the mining law. This includes both conventional and unconventional drilling activity (e.g. shale gas). Geothermal well activity is also covered.

Sources of evidence:
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response: Gas storage activity is covered by both Mining law, SEVESO and a separate law covering storage activity.

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

**Offshore**

*Under French law, the “work contract” (under the “Employment code”) is paramount as it offers maximum protection to the workers. It covers all transportation activity, by car, air or sea and all places of work.*

*The mining legislation only applies to the actual place of work. Offshore, this will mean the installation.*

*It is unclear as to whether diving activity is covered.*

*Hence, under French law, all workplace locations (including transport) are covered but not necessarily due to Directive 92/91/EEC.*

**Onshore**

*The site boundary workplace is generally taken to be the workplace.*

*The protection offered by the “work contract” also applies.*

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

**Onshore/Offshore**

*At the individual (i.e. personnel level), under the law, each site has to have a designated responsible person (chef –de–….?). All (visitors, sub-contractors etc.) persons on the site are obliged to comply with his/her policies.*

*At the organisational level, the company responsible for operating the facility (i.e. the operator) is taken to be legally responsible. The operator can either be 1) part of the licensee consortium or 2) owner of the concession or 3) appointed by the concessions/license owner.*

*The situation with Sub-contractors*

*All sub-contractors have to comply with the National Legislation. At the same time, each company has a legal autonomy that has to be protected. Hence, there are JOA’s (Joint Operating Agreements) that are developed to govern how the interfaces between the companies will be managed.*

Sources of evidence:
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:
What constitutes a “Major Change” is defined by the French National Legislation. It includes (but is not limited to):

- Change in capacity
- Any modifications that result in a change in the risk profile of the facility (increase or decrease)
- Some organisational changes are also deemed to constitute major changes (as long as they meet certain pre-defined criteria)

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or subject to independent/peer review? If so, how is this achieved?

Response:
Under the French National Legislation, the onus is on industry to demonstrate that safety and the right level of quality (e.g. by the use of ISO 9001) has been achieved. To achieve this, the auditing team must be independent from the execution team (i.e. self-certification is not espoused). The independent requirements do not imply the audit teams be external to the organisation; the key obligation is that they must be sufficiently independent.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and/or other independent party? If so, how is this achieved?

Response:
N/A. See response from regulator.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
The National Legislation in France (general not directly pertaining to those implementing Directive 92/91/EEC) requires that everyone on site is covered (i.e. both workers and non-workers. By this token, workers involved in rescue and recovery workers will be covered. Risk to persons offsite are also addressed, but as a result of the SEVESO Directive as opposed to the Directive 92/91/EEC.

Sources of evidence:

30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

Sources of evidence:
From a gender “perspective”, French law is non-discriminatory. From a “handicapped/physically-challenged” viewpoint, each worker must be able to perform his job to the expected standards. This capability must be confirmed by a medical assessment. Each employee in general roles must undergo a medical check once every two years. For specific role, the frequency is reduced to an annual basis.

V.9.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:
Generally speaking, the enforcement protocol is the same across all activities. It incorporates two elements: documentary review and physical inspection. Documents are accepted as part of the review process. Furthermore, where necessary, comments are made. However, it is important note that acceptance of the documents does not imply a transfer of responsibility to the authorities; industry always remain accountable for the risks they create as a result of their operations.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:
The French legislation is very effective but not very efficient. It is considered to be overly complex and bureaucratic. There are many steps that need to be undertaken to ensure full compliance.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
Whilst the operator is directly responsible for the safety of the regulator whilst offshore, on the whole there is joint responsibility with the employer of the regulator.

Sources of evidence:

V.9.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
Delivers good levels of safety and is quite robust, but as noted earlier it can be quite “heavy” and tortuous. The concepts/underlying principle are quite well embedded in the TOTAL and other majors.

Sources of evidence:
that have been operating in France, hence in a sense they are “second-nature” and if removed, will result in limited impact for facilities managed by established operators. The same might not be the case for new operators.

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response: 
See response to Question 34.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: 
Very difficult to say as most of the provisions within the directive existed in the National Legislation prior to its introduction.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response: 
One item worth of note is that smaller sub-contractors are not particularly conversant with the requirements of the law and what is required to fulfil them; hence we spend a significant amount of time getting them up to speed. As the culture of sub-contracting has increased over the years, so has the scale of the issue.

For TOTAL, we see this as part of our job as it is matter of mutual interest. Furthermore, within TOTAL all workers are considered to be employees irrespective of whether they are employed directly by TOTAL or by others. For example, TOTAL’s accident statistics includes both direct employees and sub-contractors.

Sources of evidence:
V.9.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
   a. Yes. Also see previous responses.
   b. As it currently stands, it is difficult to say. Following DWH and Elgin, no gaps in the legislation (relating to safety) have been found.
   c. In terms of “minimum standards”, a frequency of 10-6 per year is now taken as acceptable in terms of safety and environmental risk in the context of the ALARP framework applies. However, under the employment law, there is no acceptable limit and zero risk is the policy that applies unless it can be proved that all necessary measures have been taken to prevent the incident.
   d. See (b).

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
   No response.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
Response: No response.

V.9.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
From the perspective of the overall legislative regime in France — as opposed just the regulations that give effect to Directive 92/91/EEC— there are many components that have to be executed and yet are of limited value. For example, (frequent) updating of the H&S document can be time-consuming and burdensome. Also, some of the burdensome/no value provisions largely relate to the prescriptive elements within the national legislation.

To put the above in context, the amount of effort/time required to fully comply with regulatory provisions in the Netherlands is much less than is required in France. Key reasons for this include, the Dutch Social dialogue approach, the fact that their legislation is more goal-oriented.

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
See response to Question 41.

V.9.10 Future regulatory approach
43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: On the whole, a directive approach is preferred as it can be easily implemented into the French legal framework is quite complex. However, there is some benefit in what is proposed by the Offshore legislation (predominantly the combination of safety, environmental and liability risks etc.) as it will be completely new for France.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: No response.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response: As the provisions of the directive apply to all situations, it is considered that more extreme environments are addressed. However, more clarity is required on the scope of application with regard to geographical area, particularly on the interface with maritime law.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response: Additional soft regulations would be a useful addition as there none currently in place for the directive. NB In this context, “soft regulations” are understood as guidance documents linked to legal provisions.

The one drawback to this approach is that such guidance documents though designed to be flexible; have acquired “hard” legal status and are often used in legal cases where non-
V.9.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

- There is room for improving the directive, especially with regards to its profile.
- There is some merit in the new offshore proposal as a means to improve safety in the offshore industry.
- The degree of overlap between the directive and the offshore legislations should be minimised as much as practicable.

Sources of evidence:

V.9.12 Attached Information

No further information.
V.10. NOTES FROM INTERVIEW WITH:

Regulator
State Authority for Mining, Energy and Geology
from
Germany
V.10.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>State Authority for Mining, Energy and Geology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Regulator</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counts in which your organisation operates:</td>
<td>Germany</td>
</tr>
</tbody>
</table>

V.10.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: N/A. Session started at Question 6.
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: 
N/A. Session started at Question 6.

V.10.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response:

<table>
<thead>
<tr>
<th>Offshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>One gas field offshore. Pipelines transiting through the German sector including sometimes booster platforms. Normally 1 to 2 exploration wells offshore per year. Do have High Pressure High Temperature (HPHT) wells and shallow gas risks.</td>
</tr>
<tr>
<td>Largest offshore activity is oil platform in the territorial waters (12 nm zone) which produces 50% of the German oil production. Drill 2 to 3 wells per year (sometimes production and some exploratory). These are in a natural reserve and subject to public scrutiny. There are intentions to extend activities along the coast. The exploration wells will be offshore, with production only from the shore.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Onshore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only for Region: No new recent gas fields, only production in old fields. Biggest development is with oil on the Dutch border. Have also had 3 shale gas exploration wells and 3 for coal bed gas. Discussions are on-going regarding the fracturing for unconventional wells. Production in oil fields is being developed with 8-12 wells / year (average over years) drilled.</td>
</tr>
<tr>
<td>Currently have about 600 active wells.</td>
</tr>
<tr>
<td>Gas production reducing (4.5 BCM/yr).</td>
</tr>
<tr>
<td>Oil production is increasing slightly and if offshore projects are realised then there is the potential of a step increase.</td>
</tr>
</tbody>
</table>

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

Sources of evidence:
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>100% Private Sector.</strong></td>
<td></td>
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</tbody>
</table>

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offshore nearly no accidents / fatalities. Small accidents are also very seldom.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>For onshore in Lower Saxony the performance is better than industry in general with no fatalities. LTIs (3 days off work – from insurance) approximately up to 1 per 106 working hours.</strong></td>
<td></td>
</tr>
</tbody>
</table>

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For offshore the main leaning has been from the Piper Alpha, Deep Water Horizon and Montara. All major accidents are looked at to see if any lessons can be learnt.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Currently in an alliance with other regulators around the North Sea. Very active in the North Sea Offshore Authorities Forum (NSOAF) which is one of the main sources to learn and improve as this group is looking at accidents and handles technical issues as well. This information is shared with onshore colleagues.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>For onshore the Piper Alpha and DWH similar to offshore but to a lesser extent. The safety management approach has also been a driver.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>There is no international forum like offshore however discussions are held with WEG members on a national basis to discuss risk management, accidents etc.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Have had problems with pipelines in the past with no injuries but this was more environmental in nature relating to release to soil which facilitated a discussion with the industry over materials for production water pipelines.</strong></td>
<td></td>
</tr>
</tbody>
</table>

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of occupational illnesses in the most recent year.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Key types of illnesses.</strong></td>
<td></td>
</tr>
</tbody>
</table>
c. Please provide data sources (if available).

Response: 
*Experience of occupational illness is very low and not considered one of the major problems in the sector. This is not regulated by Mining departments but more by insurance requirements. Mining law will include occupation health protection. There have been no cases reported in the last 2 years.*

Sources of evidence:

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**V.10.4 Regulatory approach**

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response: 
*Directive 92/91/EEC is implemented by a General Federal mining regulation in 1995 which includes 5 other EU directives and is valid for both on and offshore. The requirements are fully implemented and integrated but not necessarily word for word as a lot of the content was not new and already established in the existing mining law. The new elements the directive brought forward was the risk management side including:*  
*Employer / company responsibility for safe workplaces and operations*  
*Goal setting elements*  
*Within Germany there are also State/regional laws that sit below the federal mining law.*

Sources of evidence:

---

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: 
*All requirements are embedded into one mining law in terms of safety and not implemented as part of a frame safety regulation. The frame regulation in Germany(Arbeitsschutzgesetz) does not include mining as this is all embedded in the mining law (ABBergV). Directive 92/91/EEC is transposed as part of Federal regulation which contains goal setting and prescriptive elements, while below this are State regulations which are more prescriptive and are complementary additional safety requirements relating to drilling, production and storage (f.e. BVOT).*

Sources of evidence:

---

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: 

Sources of evidence:
15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response: See answer to Question 13. A combination of goal setting and prescriptive regulation.

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

Offshore always trying to promote and support a safety culture. There are some requirements including worker reps which have to sign work / operation plans, in which companies describe in detail how they will run the activities plant / drilling activities. The worker rep will sign the paper before it goes to the regulators whom then approve it.

The German legislation comprises a number of elements for continuous improvement.

Workers can also phone the regulator to report deficiencies. This is not directly an anonymous reporting scheme; however it has been used in the past.

There is also a “Social / Political Advisor” employed by State who visits companies and holds meetings with workers / unions / reps to bring back improvement ideas and reports directly to the President of the LBEG.

Every attempt is made to be open and to engage with companies in an independent and cooperative basis.

Onshore dialogue is through the social / political advisor to workforces and also a new department has been established to build discussions without focussing on the operations plan with companies e.g. on accidents and injuries. This is seen as a better forum to discuss safety.

There are many requirements for training and qualifying people to work in certain roles offshore. Companies have to instruct workings in risks etc. and have to pass certain courses before being allowed to go on the rig. Employees in the Oil and Gas industry have a book where records of all training courses are documented including medicals. This is a company initiative and not regulatory required and is extended to all contractors.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: N/A

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: For offshore guidance look over the borders to pick out the best for own regulations.

Sources of evidence:
primarily to the Netherlands and Norway (for pipelines and booster platforms e.g. taking their diving standards). This is aided by NSOAF and sometimes inspections are completed in other countries as the systems are all linked.

Onshore below the law there are formal guidelines e.g. permitting, responding to accidents, working for other authorities that are created and discussed with WEG and others.

Where own guidelines or EU standards are not available other Internationally recognised standards such as the American API standards e.g. preventors / pipelines are used.

State mining authorities have a forum twice a year to discuss and create working groups and develop legislation / guidelines to ensure all States are on the same level, similar to NSOAF, but with the 16 regions covering mining as a whole. This helps to produce consistency across Germany and make guidelines that States need to formalise into State guidelines.

In Germany the Institute of Standardisation and the mining authorities and industry work together on the application of standards.

V.10.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:  
Special sources, normal and critical have been translated as such however there is no formal definition, but in practice this is viewed as all hazards in all situations for all people on site, including physical, chemical and biological hazards.

Formally (according to ABBergV) there is not a requirement to manage the risks of people near the facility, but this gap is filled in practice to look at the protection of people offsite in the approval process of operation plans. Only underground storage under SEVESO considers safety for offsite people.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:  
The mining law is for the processes and not areas. For drilling this includes only activities not covered by other regulations inside the site boundary (onshore).

Mining law would be in force for offshore operations when the Jack up legs are on the ground. Everything would then be under mining law up until the point where the rig comes off location. The transport of Jack-ups would not be under mining law, however the Mining Authority handle all parts of the operation so therefore liaise with other authorities. They formally manage the approval of different authorities e.g. shipping authority and the procedures and processes are written down and formally approved e.g. informing the shipping authority when the platform approaches. There is also a requirement that

Sources of evidence:
operators check the location is safe.

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>Seismic, transit pipelines, construction and decommissioning on site would all fall under the mining law while stand by vessels would be outside unless interacting with the rig. 500m zones also in place although within the tidal zone this is a little special, but follow the international rules on this.</strong></td>
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</table>

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shale gas, all exploration, core sampling and gas storage would be covered. In practice geothermal is included, however interpreting the regulation word for word it would not be included, however currently Geothermal is not included in industrial law so in practice it is included under the mining law if deeper than 100m.</strong></td>
<td></td>
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</tbody>
</table>

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Carbon Capture and Storage has its own law and is not under mining law, unless in a facility which is deeper than 100m, however this is under review in Germany and is not finalised.</strong></td>
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</tbody>
</table>

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>For onshore the translation is as a “working area” which is all places with the same hazards. In practice the workplace is inside the site boundary for drilling and production. The pipeline is difficult to define as for normal operations it is not considered a workplace, but it is when work is being done on it.</strong></td>
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</tbody>
</table>

**For Jack up offshore operations the same rules as the Netherlands are common practice. The regulation does not put requirements on helicopter and its operations however there is a requirement to have safe helicopter operations and cooperate with the Flight Safety Authorities. If diving operations are conducted from the rig then this is deemed the workplace. If from a vessel on pipelines then similar to onshore pipelines and mining law would be applicable when preparing for work. For diving operations case by case f.e. Norwegian regulations are followed at transit pipelines and a clause is included in the approvals on the relevant diving safety requirements.** |
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response: The employer is the company who operates the facility (and is the licence holder). The regulator’s first addressee is the operator. The operator and all sub-contractors have to name one or more person(s) as their responsible person(s) for the different tasks to perform. While the operator has ultimate responsibility there remains a chain of responsibility. The regulator will look at the bridging document to make sure everything is in place and properly managed.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response: Major change is not defined, but in practice this will include new facilities, new hazard, personnel, a change to health and safety of people or something that has an impact in the field of safety. The companies in Germany complete job safety analysis which checks the conditions and analyses if any changes are needed. The changes can be physical, organisational and/or procedural. For offshore this will include also where there is a deviation from the operations plan.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or subject to independent/peer review? If so, how is this achieved?

Response: No formal QA/QC done onshore. Offshore there is a practice where there is independent checking.

The H&S Document and operations plan cover similar content as a UK Safety Case but in different documents. The operations plan is approved both on and offshore. Now the practice is to ask additionally for the existing safety cases for offshore. The H&S document describes and analyses the hazards. Then companies have to consider their precautions for health and safety protection and there are inputted into the operations plan. Also insurers insist on documentation before insuring.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and/or other independent party? If so, how is this achieved?

Response: The details of the operations plan are reviewed by the regulator when routine. For more complex operations independent 3rd party experts are used. It is up to the authorities to decide the content of the review and the operations plan is formally approved and stamped.

Sources of evidence:
29. Does the relevant legislation cover workers involved in rescue and recovery operations?

**Response:**

*For onshore the operators establish a contract with the community fire brigade for fire fighting. If the lead of the response team is with the fire brigade then this is not under the mining law. The responsibility lies with the leader of the response and therefore if it is the operator it would be under mining law.*

*For offshore the rescue and recovery would be under the mining law for example in emergency situations when the standby vessel would be required to do something.*

**Sources of evidence:**

30. How does your country's relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

**Response:**

*Neutral*

**Sources of evidence:**

### V.10.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

**Response:**

*See earlier answers on design and operations plan.*

*The operations plan covers Health and Safety but is not the H&S Document. The primary inspection is of the operations plan which includes a big part of the H&S Document. It is the responsibility of the operator and the regulator checks the document in the event of an accident or injuries. Inspections will look at what they do against what is stated in the documentation and how closely they follow the guidelines.*

*For offshore the drilling plan is approved as it is in the form of the operation plan which is reviewed and formally approved. Daily drilling reports are received by the authority and if there are any questions these will be asked. The information received is basically the same as the company as the authority is almost integrated into company’s reporting system. For onshore weekly geological information logging data is received.*

*Formally there is no responsibility for construction in a yard, however if it is a safety critical part the authority could be asked to the yard to verify, although this does not happen too often as a 3rd party technical expert would fulfil this role on the regulator’s behalf to verify and sign for this.*

*For onshore there is a special permit for structures of rigs and during the design and construction to assure they are built to standard. It is possible to make inspections of the construction facilities. For specialist equipment such as pressure vessels and pipelines a 3rd party verifies this on the regulator’s behalf.*

*When in operation the regulator determines where to focus for inspections with some freedom in this area. Typically these will include the management systems and H&S Document. The frequency of inspections depends on the individual situation with lower risk once or twice a year and new critical projects if necessary every day.*

*Unannounced inspections are possible however these are rare as wish to maintain the spirit*
of cooperative relations.

Onshore have requirement for internal and external verification process for hardware in own drilling directive annex at State level and not from Directive 92/91/EEC.

Offshore the practice is that management systems are certified to ISO standards by 3rd parties in addition to the hardware verification. Therefore these companies are subject to internal and external audits of their system. Enforcement is focussing more on major hazards control and that the operator has a good safety management system and processes.

Risk Assessments offshore are completed during the planning phase. The environmental elements of these are not strong, but in theory if it is safe then the environment should be protected. If major changes are needed then this is re-evaluated.

In a flora/fauna special habitat an extra environment study is done, which addresses normal operations and not accidental risks. The new EU regulation/directive will add in environmental risk from accidents.

For onshore operators do take a wider view e.g. look at public impact risk such as water pollution, although the process is more deterministic than risk based.

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

Seen as practical and if want to enforce something they can as the instruments are not missing. It is more an issue of capacity, however there is good cooperation with the companies.

Sources of evidence:

33. Who is legally responsible for the safety of regulators/enforcement officers while offshore or during transport to offshore installations?

Response:

Onshore the authorities are responsible for the safety of inspectors, but still fulfil the requirements of the companies. This is different from contractors where the operator will always have responsibility.

Offshore companies require inspectors to comply with their standards and regulators comply when on their site with no conflict.

Sources of evidence:

V.10.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

For onshore there is some duplication with both the H&S Document and Operations Plan, which is driven by the historic German regulation requiring approval and control, which does introduce some inefficiencies, however see some benefit in the offshore elements being introduced step by step, learning from regulation, accidents and EU requirements into other industries such as traditional coal mines.

Offshore there is a similar overlap between the old prescriptive and new goal orientated requirements as introduced by Directive 92/91/EEC, but see this as part of the transition to a more risk based future, which is also being driven by the new offshore regulation in
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response: No response.

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: The directive is a minimum standard and the industry in Germany was generally above this level so this was not considered a major issue for the onshore industry, however the hazard analysis is seen as a good addition.

The focus of Directive 92/91/EEC is on occupational health and the workplace; however the EU offshore regulations would enhance the MAHs that are missing from Directive 92/91/EEC.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response: There is an opportunity to improve the operations document and H&S document to avoid duplication.
V.10.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response: See Response to Question 39.

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response: For the offshore industry the contents of the new EU Offshore Regulation would complete the picture so therefore generally happy with Directive 92/91/EEC. Similarly for the onshore industry happy with Directive 92/91/EEC as it is part of a bundle of directives implemented into national regulation for the mining industry. However the State is not responsible for developing these regulations at the Federal level so cannot comment here.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: No response.

Sources of evidence:
V.10.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: Do not see an excessive effort required for a change of status and there have been no complaints or support either way from the industry.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: No response

Sources of evidence:

V.10.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: From LBEG perspective there is not a need for a change of status as there is not a gap between European and German regulation.

Sources of evidence:
44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: 
For countries new to the industry there is not always an understanding of what lies behind the EU Regulations when transposing them into National legislation. In addition cultural issues from country to country can also be a challenge and some form of supporting mechanism to those Member States new to the industry could be beneficial. This would ensure continuous improvement is achieved potentially through exchanging personnel, coaching or assistance from organisations such as NSOAF. This all takes time and resources.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response: 
The directive is basic for coastal issues, which are considered “extreme conditions”. If the new regulation is not coming would have a need for more regulations however the additional requirements from the regulation coming from Brussels will enable stronger regulations for Companies operating in the German offshore sector.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response: 
No comment

Sources of evidence:

V.10.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response: 
Comments are the views of the “Lower Saxony Authority” (LBEG) and not that of other States.

Sources of evidence:
V.10.12 Attached Information

No further information
V.11. NOTES FROM INTERVIEW WITH:

Industry
Association of German Oil and Gas Producers

from

Germany
V.11.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Association of German Oil and Gas Producers</th>
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<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Industry</td>
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<tr>
<td>(e.g. Government/Regulator, Trade</td>
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<tr>
<td>association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country,counties in which</td>
<td>Germany</td>
</tr>
<tr>
<td>your organisation operates:</td>
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</table>

V.11.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Interview session started at Question 6.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Interview session started at Question 6.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Interview session started at Question 6.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response:                                             Sources of evidence:

DNV Reg. No.: PP030087
Revision No.: 1 - Final
Date: 2013-02-15
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Interview session started at Question 6.

Sources of evidence:

V.11.3  **Context**

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: Approximately 100 years of oil and gas experience in Germany, with established legislation prior to this introduced by the EU via Directive 92/91/EEC. The main O&G operations are located in Northern Germany. Member companies of WEH include the oil majors, 60 to 65 contractors e.g. drillers and all gas storage have now also become members (storage in aquifers, salt caverns and depleted wells both for oil and gas).

Currently very little exploration with expectations for more developments in old oil fields. Almost all onshore except for one offshore field for gas and one oil platform near the coast. Currently uncertain about the future of shale gas.

The trend is a drop off of approximately 10% per year for gas, while oil is remaining relatively flat. The focus is on enhancing production from existing fields with new technology.

Approximately 50% of German gas is “sour” gas with two installations to clean up the gas with one due to close next year due to production levels. The gas is typically between 1-20% H₂S.

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: Almost all onshore except for one offshore field for gas and one oil platform near the coast.

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:

In Germany oil and gas LTIF is one day off from work, while this is 3 days for other industry. Monthly statistics are collated by WEG based on the OGP definitions.

LTIF for Germany (all industries) ~ 16

LTIF for oil and gas ~ 1

Included in accident data collection are descriptions of the accidents which are used to run workshops and share experiences. The workshops typically happen once a year with safety engineers and are run by WEG with all members including contractors. There is no differentiation between these in the accident data on operating company sites.

It has been more than 20 years since the last fatal accident. There was a small blowout at a gas storage site which was operated by a local energy company.

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

The EU is driving some of the developments in German regulation today with WEG involved in developing technical standards.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:

Not identified as a major problem and no statistics showing cases of occupational illness. These are managed by regulations and management system requirements.

Sources of evidence:
V.11.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

   Response:

   Directive 92/91/EEC is implemented into one mining law at the Federal level combining multiple directives into one (including 92/104, 89/391, 89/656, 92/158). The structure has changed and it is therefore not a direct transposition 1:1 from the directive into German law as there was already some existing working legislation. The key parts have been taken and put into existing legislation.

   If relevant for Exploration and Production activities they are included in the German Mining Law. There is a general safety law that applies to everything. However, the specific mining law covers safety and environment relating to mining as a whole and not just through drilling. EIAs are under a different law especially in relation to mining activities. There are some aspects of safety and health not addressed by the directive such as H₂S, however these are addressed by the States/regions of Germany by regulation and guidelines at a regional level where applicable. These also include regulations for other aspects such as pipelines, completion works and drilling fields etc. The focus on safety to workers under Directive 92/91/EEC has been quite a new concept in Germany.

   Sources of evidence:

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

   Response:

   Some elements of Directive 92/91/EEC are literally translated into the Federal mining law. Environmental legislation on EIA for the mining industry has been taken out of the general EIA requirements and there is now a special E&P EIS law.

   Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

   Response:

   Both.

   Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

   Response:

   Driven by EU legislation there has been a drift to the risk assessment approach with more and more RAs necessary e.g. for fracking. Therefore German Legislation is a combination of goal-setting requirements with historical prescriptive requirements as well.

   Sources of evidence:
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</table>
| **WEG conducts workshops with members including international companies (See also Question 9) to share learning experiences. This is industry driven and not directly a regulatory requirement. The industry learns from accidents as the consequences cost a lot of money and the aim of the industry is for 0 accidents. Safety culture is a big player and a main driver for E&P companies.**  
**There are also regulatory drivers bringing the industry initiatives together to help in developing safety culture, such as the regulatory requirement for workers which covers the involvement of the workforce and unions.** | |
### Response:

Special sources of hazards are translated directly into German however it has not been formally interpreted. In practice the company and regulator need to interpret this and can be considered hazards which are unique to operations e.g. blowouts (especially sour gas) H2S, risk to plant from wind turbines. If drilling a well this is considered a special hazard that requires more safety measures to be included in procedures. A workshop is scheduled to discuss worst case scenarios for the industry such as blowouts (sweet gas), loss of central control system and pipeline leaks.

Legislation within Germany does cover the provisions for major accident hazards.

Normal and Critical are directly translated as such into the German Legislation. Normal is considered the normal processes of drilling and production (within operating envelope), while critical is when running out of the normal range of pressure, temperature etc., for example. Companies are required to plan for critical situations and agree with the mining authority procedures for dealing with critical situations.

Legislation covers all hazards.

### Sources of evidence:

<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
<th>Response</th>
<th>Sources of evidence</th>
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<tbody>
<tr>
<td>20.</td>
<td>What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?</td>
<td>Not sure with offshore. Onshore everything on a drilling or production site is under the mining law, while transportation to and from site is not covered by mining law. The transfer from mining law to other legislation takes place where ownership of the gas changes. This is a special point that is defined and documented which could be a valve. In practice it is possible to have 2 laws applying on a site, however the point of change in legal framework is clearly defined and documented.</td>
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<tr>
<td>21.</td>
<td>What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?</td>
<td>Everything on site is under the mining law. Transport to and from is not covered by the mining law. Construction on site would be covered by mining law, but any fabrication or operations in yards off site would not be. Decommissioning is covered until fully finished.</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?</td>
<td>If drilling below 100m then it is covered by the mining law. It does not matter what you are drilling or if extracting or not.</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO2 capture and storage)?</td>
<td>All these would be under the mining law as this is all implemented into this legislation.</td>
<td></td>
</tr>
</tbody>
</table>
There is currently a new carbon capture and storage but not reviewed this.

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response: The workplace is defined by the site boundary. Transportation is included under a different law.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response: The operating company is the “employer” and the only one responsible for safety. The operator is responsible for all personnel working on their site whether they are employees, contractors, sub-contractors etc. and is required to name the person with ultimate responsibility. The responsibility always remains with the operator even through delegation of work to contractors and sub-contractors, such as ensuring people are trained and competence to do this work.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response: Major changes are not defined, but in practice this is reviewed on a regular basis to see if the H&S Document needs updating. This might include building something new or organisational change but generically is considered any change with influence on the H&S Document.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or a subject to independent/peer review? If so, how is this achieved?

Response: Think this is case. An independent technical agency reviews all standards that apply making sure that all installations meet the required technical standards (design) not covered directly in the mining law. These are signed off confirming it is designed and constructed to the appropriate standards.

The H&S document is not subject for independent review, the operating company is responsible for ensuring they have it while the mining authority can look and check this document.

Environmental requirements are covered by EIA or other German law e.g. Laws of the states, laws for protection of the Environment. Approval is given once complying with all other laws e.g. Clean Air / Water Law however the mining authority will liaise with the...
other authorities to ensure compliance with these legislation, but in practice companies will talk to more than one authority through this process. In practice the risk assessment process is bringing together the health and safety and environmental risk assessment processes.

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response: The H&S Document is legally required to be submitted to the regulator, although in practice dialogue is maintained with them. The mining authority can ask to review, but typically the content will be reviewed after an incident.

Drilling plans are submitted and approved by the mining authority as required by the mining law. There are no requirements for independent QA/QC of the drilling plans.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response: Not sure, think this is under mining law when on site, however should check with the regulator. Within the emergency plan there is a requirement to define who is responsible and when.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response: Neutral, personnel are checked by a doctor to determine if they are fit to work on site.

Sources of evidence:

V.11.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response: There is no difference between onshore and offshore enforcement. In Germany the mining authority is responsible and the regulation is independent of area, so they liaise with all the authorities e.g. to check with the water authority if a development is ok.

The operators are required to document what they are doing at a higher level than the H&S Document. Once operating they will be subject to inspections with inspectors having the power to shut down operations and request corrective actions. All changes in drilling (plan, different geology) have to be reported to the authorities.

Sources of evidence:
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

It could be improved by placing more responsibility on the operator, so they can react and plan efficiently thereby reducing time required for regulator consultations (More an environmental issue than health and safety).

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
The Operator.

Sources of evidence:

V.11.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
The E&P industry is seen as having a very high standard for health and safety. This is driven by historical standards in Germany initially implemented from coal mining into the mining law and driven also by the companies operating in Germany. For a long time there has been close relationship between the regulators and industry predating the EC requirements.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
No response.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?

b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
The directive was good as it made Germany review and question its own legislation to

Sources of evidence:
37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

<table>
<thead>
<tr>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>There has been a positive impact by maybe raising the standards and improvements with contractors and the application of similar rules and standards, especially when working in different European Countries.</td>
</tr>
<tr>
<td>There was a slight negative impact due to the requirement to define the content of what goes into the H&amp;S Document at the start. While not necessary in Germany now maybe some form of guideline would have been beneficial at the time.</td>
</tr>
<tr>
<td>No effects on small and medium-sized enterprises.</td>
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</table>

V.11.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:

<table>
<thead>
<tr>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Risk acceptance is a major discussion point in Germany where levels or risk awareness can vary between the language engineers might use as opposed to the public, politicians, lawyers etc.</td>
</tr>
<tr>
<td>Legislation is seen as quite effective and it is believed that if the DWH had been aligned with German legislation it would not have happened and therefore do not see the requirement for changes in regulation due to this incident.</td>
</tr>
</tbody>
</table>
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:

The directive is seen as currently ok and therefore no changes seen as needed.

One of the biggest problems faced is the overlap between directives and alignment between directives and regulations. Frequently the industry is unaware or initiatives at the EU that will affect the E&P industry. It would be advantageous to be aware earlier so can provide industry input into the process.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

No response.

Sources of evidence:

V.11.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:

Initially there was some increased burden when changing to the new system i.e. H&S document as time was needed to define what content was needed for this document. Now this is implemented this is not seen as an issue.

In Germany frequently more time is needed for projects to bring up items and discuss with the public, however this is not driven particularly by the implementation of Directive

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
No response.

Sources of evidence:

V.11.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:
A directive is the right way as there are too many countries with different cultures, history, etc. to have one system via a regulation.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:
Useful if starting from scratch as always good to have a starting point as opposed to starting from nothing.

Sources of evidence:
45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:
Do not know, may need to think more about “special risk” but not change the directive. The legislation should provide a framework that can work within to ensure the measures taken within the H & S document are adequate for that environment.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

   b. What options are used in your country?

Response:
In principle Directive 92/91/EEC is a good directive so should not be a need to regulate more. Guidelines are needed for special situations in order to react quicker to specific situations; however these might not work effectively across Europe due to cultural differences which could introduce more risks, so flexibility needs to be maintained.

Sources of evidence:

V.11.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:
No response.

Sources of evidence:

V.11.12 Attached Information

No further information.
V.12. NOTES FROM INTERVIEW WITH:

Regulator
Health and Safety Authority (HSE) and Committee for Energy Regulation (CER)

from

Ireland
V.12.1 Demographic Questions

| Organisation: | Health and Safety Authority (HSA) and Committee for Energy Regulation (CER) |
| Stakeholder type: | Regulator |
| (e.g. Government/Regulator, Trade association/Operator, Union, NGO) | |
| EU/EEA country/counties in which your organisation operates: | Ireland |

V.12.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

   Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

   Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6.

   Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: Sources of evidence:
5. What other options (e.g., guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

### V.12.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

- Please provide a brief description of relevant activities in your country.
- How many exploration & development wells drilled annually, and expected trends?
- How much oil & gas production annually, and expected trends?
- Extent and plans for other “extraction through drilling activities”.

Response:

- **All activity is offshore.**
- **Presently two fixed offshore installations (one of which is normally unmanned) extracting natural gas from the Kinsale Gas Fields off the south coast. Extraction of natural gas from the Corrib Gas Field expected to commence in late 2013, the processing of which will be done from an onshore facility.**
- **1 to 2 wells drilled per year for the next 2-3 years. Maximum of 3.**
- **Onshore, there is an on-going discussion on fracking. Three licenses have been issued to conduct initial geological survey type work. Depending on results achieved, these may become full exploration license in the future.**

*Remarked that Providence Resources has recently had some positive results with regards to drilling activity.*

---

7. What is the balance of activity between offshore and onshore industries in your country?

- Proportions of exploration & development wells drilled onshore and offshore.
- Proportions of oil & gas production onshore and offshore.

Response: **All offshore.**

---

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: **All private.**

---
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

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<th>Response:</th>
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| - No fatal accidents to date in the exploration arena.  
- Indicates that there are no mechanisms to track injuries in the exploration phase, but perceives the LTI rate to be low of the order of 1 LTI per exploration activity.  
- The number of people currently employed in the industry will be limited to individuals working for Kinsale and on the exploration rigs. |

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10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

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| Piper Alpha was a key learning opportunity.  
The new petroleum safety framework act though propounded before DWH will on the whole be implementing/aligned with the findings/learning from DWH – using a goal-setting approach and separation of licensing/safety responsibilities. With the new act, Licensing activity will remain with the DCNER and new safety responsibilities will be assigned to the CER (an independent safety regulator) in a shared capacity with the HSA.  
It was stated that the decisions to split responsibility for licensing/safety was political and one that was aimed at increasing confidence/trust in the regulatory regime. |

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<th>Sources of evidence:</th>
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11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

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<th>Response:</th>
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| Not aware of any particular, specific or pervasive occ. illness offshore. There are instances of dermatitis and other related diseases but these are not chronic and thus not key areas of concern.  
Occ. illness data would be embedded within the overall safety data reported by the HSA. |

| Sources of evidence: |
### V.12.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

**Response:**

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<tr>
<td><strong>a.</strong></td>
<td>The provisions of Directive 92/91/EEC have been implemented within S.I. (statutory instrument) 467 of 1997. This S.I. implements the provisions of Directive 92/91/EEC as well as those contained within 92/104 (on mineral extraction via mining). The terms/phraseology used S.I. 467 of 1997 closely mirror those employed in the directive. The S.I. references other acts and statutory instruments e.g. the H&amp;S at work Act and the following:</td>
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<td>Sources of evidence:</td>
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<tr>
<td></td>
<td>The S.I.s referenced above are all prescriptive and are offshore specific.</td>
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<td></td>
<td>b. Perceives S.I. 467 of 1997 meets the requirements of the directive, but doesn’t exceed it.</td>
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<td></td>
<td>Offshore exploration and extraction activities are exempted from the provisions of the HSA’s Safety Health &amp; Welfare at Work (Construction) Regulations 2006. However, equivalent health and safety measures are required to be demonstrated by offshore operators in respect to construction activities undertaken offshore.</td>
</tr>
<tr>
<td></td>
<td>Offshore exploration and extraction activities are exempted from the provisions of the ATEX Directive.</td>
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<td>c. N/A</td>
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13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

**Response:**

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<tr>
<td><strong>See previous response. It has been implemented along with Directive 92/104/EEC.</strong></td>
<td>Sources of evidence:</td>
</tr>
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</table>
14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:

The current legislation requires that all hazards are addressed/managed and does not explicitly discriminate between major accident hazards and those related to Occ. H&S. Furthermore there is no particular focus on MAH.

The new (i.e. proposed) petroleum safety regulation will implement a safety case regime and require that all risks are reduced to ALARP. In this context, there is a particular interest/emphasis (by the CER) on MAH, but the SC will still need to address Occ. H&S issues.

Storage of HC’s as a standalone activity is not currently covered by the regulations (existing or proposed). It is currently regulated because it is a linked activity (i.e. to production). The regulations are currently being developed to cover this scenario.

HSA jurisdiction in relation to offshore exploration & extraction activities extends beyond territorial waters to include designated waters as per the Continental Shelf Act. With respect to HC, CO2 storage etc. recent legal opinion provided to the HSA indicates that H&S legislation does extend beyond territorial for such activities.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:

Legislation uses both elements i.e. goal-setting and prescriptive. The 1991 and the 1997 regulations are examples of the prescriptive regulations that are still in use. Special dispensations/exemptions from certain provisions within the prescriptive regulations can be acquired on application to the minister. However, it must be demonstrated that the proposed method provides an equivalent or higher level of safety.

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

The HSA carries out at least 1 inspection (as opposed to audit) per year on every installation in Irish waters. The inspections are done using a questionnaire/question set to compare/check compliance with regulatory provisions. Other checks are done on an ongoing basis. The HSA determines the inspection focus based on inputs such as incident trend data etc.

At the present time, there are no provisions within the legislation to cover workforce engagement BUT would like to see it included within the SC (and hence would want to legislate for it).

However, the 2005 act includes obligations for workforce engagement (safety reps and safety consultation). In this regard, sees safety culture elements as addressed (albeit on a limited level). The act empowers safety reps to:

- investigate accidents in cooperation with the operator.
- accompany inspectors during an inspection (only routine, not during accident investigations).
- are entitled to specific training to enable them to discharge their role.

HSA also meets with companies who bring in new rigs to the country to explain their...
MANAGING RISK

obligations / outline requirements of what is expected.

HSA has representation on the petroleum exploration and extraction technical standards committee.

The committee was created under the auspices of the NSAI (National Standards Authorities of Ireland). The committee also decide what standards industry should comply with amongst the various international standards that apply. The stakeholders involved on the committee include: The HSA; the maritime regulator; the aviation regulator; IOOA; Operators - (Kinsale and Shell) and a couple of independent consultants.

The committee meets on a regular basis.

Also remarked that a wide scale consultation was held for the development of new CER regulations. Contributions were received from the industry BUT not from the worker groups.

Went on to state that the HSA adopts a transparent policy in terms of HSA protocol for accident investigations.

Also highlighted the availability of mechanisms for anonymous reporting. The 2005 act includes provisions that are designed to guarantee employee protection from reprisals / recriminations that might ensue. Where there is a risk of identification, the HSA exercises discretion. However, there are still some concerns amongst employees as to the level of protection the system currently affords.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:

N/A There are no differences.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

The HSA has not developed or issued guidance specific to the offshore industry. However, it has developed a wide range of guidance on Occ. H&S issues (and on matters such as ATEX and "Working at height") that have broad application both on/offshore.

The CER (as part of the new regulations) will include guidance on the expectations of the safety case (i.e. contents etc.). Such guidance will be limited to the safety case as the cost of providing more wide-ranging material will be prohibitive for a small regulator with limited resources.

Highlighted that the EU ran a number of technical working groups which produced very useful guidelines on the implementation of the SEVESO II Directive. The guidelines produced were of immense value to the regulators (especially those in the smaller countries). Consequently, would like to see a similar approach used for any updates to the directive.

Sources of evidence:
## V.12.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>Consider all hazards to be covered. However the level of detail / extent to which each hazard is addressed can be limited by some of the prescriptive elements that apply.</strong></td>
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<tr>
<td><strong>Understands lack of coverage not to be the key issue but rather the degree of overlap between what provisions currently exist.</strong></td>
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<tr>
<td><strong>The terms Normal/Critical are not used in the regulations but would expect the risk assessment to identify what activities are “Normal” or “Critical”.</strong></td>
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<tr>
<td><strong>As noted earlier, the new regulations will place more emphasis on MAH.</strong></td>
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20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>The offshore specific Regulations include support vessels and towing vessels within the 500m exclusion zone. As stated earlier all places of work are subject to the requirements of the HSA’s Safety, Health and Welfare at Work Act, 2005 including vessels and aircraft. In the event of a maritime or aviation incident involving a vessel or aircraft then the agency with primary legislative responsibility would lead an investigation under existing MOUs between the HSA and the relevant Marine or Aviation agency. This is done via cross-party deliberation on a case by case basis.</strong></td>
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<tr>
<td><strong>In general, it is expected that vessel activities connected to the installation will be covered, otherwise marine law will hold. Also understands the safety case to apply when the facility is on location (e.g. for a drilling campaign).</strong></td>
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<tr>
<td><strong>As noted previously, perceives the key issue rests with overlaps and not gaps.</strong></td>
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<tr>
<td><strong>The following remarks were made in regard to drilling rigs...</strong></td>
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<tr>
<td>- All existing offshore legislation will apply and will need to be complied with</td>
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<tr>
<td>- As a legal obligation, the rig needs to have a safety statement under the 2005 Act</td>
<td></td>
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<tr>
<td>- Meeting between all stakeholders (regulator, licensee and operator) are held at the earliest opportunity to ensure requirements to operate are clear and understood</td>
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<tr>
<td>- Currently, The HSA will draw on documents from other countries e.g. UK safety case and use this to develop a bridging safety statement document. The HSA will help to identify any gaps/areas that are still required to fulfill Irish regulations. Full compliance with Irish regulations is required.</td>
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</table>

*It was also stated that the HSA is not a permitting or licensing regime, but they do have powers to prohibit activities. All approvals etc. are currently administered by the PAD, in the future the CER will have this responsibility.*
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

- Decommissioning activities are covered, but there is no experience of its use.
- Irish construction regulations will not apply offshore.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

- S.I. No. 467 of 1997 that implements the Directive 92/91/EEC covers the mineral extraction industry. Shale gas, salt mining and similar activity are understood to be covered by this legislation. However the new CER regulations are aimed at petroleum i.e. hydrocarbon sources only.

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

- CO₂ capture is not covered under S.I. 467 of 1997(Directive 92/91/EEC). Storage of natural gas in an existing gas field could be subject to 92/91 if the field still had the capability to product even small quantities of gas independent of the stored gas (this scenario has not been legally tested). However Ireland’s experience to date is that gas storage activities are carried out in parallel with gas extraction from adjacent fields therefore the combined activities are subject to Directive 92/91/EEC. Activities such as underground coal gasification will be covered.
- Pipeline safety is currently administered/regulated by the DCNER (PAD). This responsibility will move the CER with the new regulations.

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”? Does it cover divers in diving operations?

Response:

- In Ireland, the definition of the workplace is given in the Safety, Health and Welfare at Work Act 2005 as follows:

  The “place of work” includes any, or any part of any, place (whether or not within or forming part of a building or structure), land or other location at, in, upon or near which, work is carried on whether occasionally or otherwise and in particular includes—

  a. In relation to an extractive industry including exploration activity, the whole area intended to house workstations to which employees have access for the purpose of their work relating to the immediate and ancillary activities and installations of, as appropriate—

    (i) the surface or, as the case may be, underground extractive industry, including overburden dumps and other tips and any accommodation that is provided and, in the case of the underground extractive industry, any working area,

    (ii) the extractive industry through drilling onshore including any accommodation

Sources of evidence:
that is provided, and

(iii) the extractive industry through drilling offshore, including any accommodation that is provided,

b. A tent, trailer, temporary structure or movable structure, and
c. A vehicle, vessel or aircraft

Based on the definition above, in Ireland, the transportation of workers is covered (via helicopter, vehicle or aircraft).

Furthermore, diving activity is also covered.

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

The licensee is the concession holder; the owner is the installation owner.

The 2005 H&S Act (section 15) places responsibility on all persons in control of the workplace. This act is general in applications and sets obligations on all parties – both the employer and the employed.

With regards to the new CER regulations, the key focal point for enforcement activity will be the licensee. In the scenario where the licensee made up of a group of organizations, CER can take action against any or all of the members of the group.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?
b. How do stakeholders understand this criterion?

Response:

Currently, no specific definition exists but the new CER regulations include a provision to inform the CER on any “major change”, hence guidance as to what constitutes a “major change” will be developed. In the future, all activity has to be conducted in accordance to the approved safety case.

There is a general requirement to keep the safety statement (HSA requirement) and safety case (CER requirement) up to date.

On a practical level, proposed changes are discussed beforehand between all parties.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:

Offshore, there is no specific legislative requirement to have a SMS or to operate to an international standard but such provisions are required as part of compliance demonstrations.

Onshore sites that fall under the SEVESO legislation are required to have a SMS.
The HSA do not specifically set a standard for what SMS to adopt. However operators must work to best international standards, so as to be able to demonstrate compliance with the 2005 Act.

The current regime includes...

- a well verification scheme and well management scheme run by the DCNER (outsourced by a consultant).
- no verification schemes are in place for other elements of the facility with the exception of product safety regulations such as CE marking etc.

The future regulations will require the following...

- A safety case to be submitted.
- The SC needs to be in line/consistent with the Irish S.C guidelines.
- The SC will need to demonstrate ALARP and include a description of the management system in place.
- The SC will need be renewed/reviewed after 5 years.
- The regime will include a verification scheme, details of which are currently being finalised.
- A well verification scheme is also envisaged.
- On-going inspection and audit schemes.

Eamon advised that a draft of the regulations will be available in June. Can you please send as soon as it is available?

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:

In the future...

- the CER will approve the safety case and issue a safety permit.
- approval does not mean taking ownership of the risk but that the submission is in accordance with requirements.

The HSA do not administer an approval regime, however it regulates the safety statement and conducts inspections of the SMS and maintenance logs, safe permits to work, management of change procedures etc.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

All workers are covered under General H&S legislation.


Sources of evidence:
### 30. How does your country's relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

**Response:**

The legislation addresses gender issues with regard to welfare facilities (as outlined in the directive).

All workers need to be medically fit to work offshore. Any worker that cannot demonstrate this cannot work offshore.

**Sources of evidence:**

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### V.12.6 Enforcement

#### 31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

**Response:**

The HSA currently conducts all enforcement activity. In the future the CER will also have a role.

Currently, the only documents that need to be submitted to the HSA are the OIM Notification and EER plans. The safety statement does not need to be submitted.

All inspections are planned (there are no surprise inspections). This includes an annual inspection as a minimum and other ad-hoc inspections.

Inspections are based on verifying the elements of the SMS i.e. checking not approving or accepting.

The regulator is dependent on the operator in terms of arrangements for getting offshore.

**Sources of evidence:**

---

#### 32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

**Response:**

- Considers the current regime to be adequate and practical given the scale of the industry.
- Improvements to the regime are currently in progress (safety case and permitting regime).
- The new CER regulations are being developed in close contact with the HSA to avoid/minimise areas of overlap and duplication.

**Sources of evidence:**

---

#### 33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

**Response:**

The duty-holder i.e. the organization conducting the drilling/production activity will be responsible.

**Sources of evidence:**
### V.12.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Considers the regulatory approach as having a strong positive impact. Knowledge gained from the onshore process industry has been directly relevant (e.g. administering the SEVESO II Directive/COMAH Regulations 2006). Expressed some concern relating to the logistics issues which can be present particular difficult challenges. For example, inspecting Corrib will be a challenge due to its remote location relative to onshore support locations (i.e. airport and sea port) and enforcement agency offices. Kinsale not so much an issue due to close proximity.</td>
<td></td>
</tr>
</tbody>
</table>

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

<table>
<thead>
<tr>
<th>a. How successful (in your opinion) is the implementation of the relevant legislation in your country?</th>
<th>b. What (if any) objective measures are available to show its effectiveness?</th>
<th>c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficult to quantify due to small scale of activity, but perceives it to be effective.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

<table>
<thead>
<tr>
<th>a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?</th>
<th>b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).</th>
<th>c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).</th>
</tr>
</thead>
<tbody>
<tr>
<td>The directive has been useful as it covers core elements of offshore health and safety and thus acts like a road map. Ireland tends to rely on the use of specific technical standards from the UK and other EU MSs.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

37. Please mention any other relevant issues from the practical application of the relevant legislation:

<table>
<thead>
<tr>
<th>a. Any notable difficulties in the practical application?</th>
<th>b. Any unexpected positive effects?</th>
<th>c. Any unintended (or unexpected) negative effects?</th>
<th>d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?</th>
<th>e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?</th>
</tr>
</thead>
</table>
Response:

<p>| | |</p>
<table>
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<tr>
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<tbody>
<tr>
<td><strong>Response:</strong></td>
<td><strong>Sources of evidence:</strong></td>
</tr>
<tr>
<td>a.</td>
<td></td>
</tr>
<tr>
<td>• Restated that the logistics associated with inspections can present particular challenges</td>
<td></td>
</tr>
<tr>
<td>• Continuous improvement initiatives are difficult due to the fact that exploration operators are based outside Ireland</td>
<td></td>
</tr>
<tr>
<td>• difficult to follow up due to movement of rigs (only on location for 100 to 120 days)</td>
<td></td>
</tr>
<tr>
<td>• Inspections for drilling rigs need to occur earlier than they currently do</td>
<td></td>
</tr>
<tr>
<td>• would like better management of trans boundary movement.</td>
<td></td>
</tr>
<tr>
<td>• it is challenging for drilling rigs who only come in for ~100 days to comply with the regulations.</td>
<td></td>
</tr>
<tr>
<td>• Drilling activity in some areas (west coast of Ireland) is only limited to certain periods (March to September) of the year due to inclement weather (risk of rig capsize).</td>
<td></td>
</tr>
<tr>
<td>b &amp; d.</td>
<td>Places more focus on those in control of the workplace which means it covers all contractors. Feedback so far suggests this is welcome, seen as positive and helps to improve standards.</td>
</tr>
<tr>
<td>c.</td>
<td>perceives some gaps to exists e.g. in construction and CO₂ storage. Unclear how this regulations address/cover this area.</td>
</tr>
<tr>
<td>e.</td>
<td>Expressed some concerns relating to knowledge transfer (ageing workforce)</td>
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</tbody>
</table>

**V.12.8 Evaluation**

38. Are changes needed in the relevant legislation in your country?

<p>| | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>a.</td>
<td>Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?</td>
</tr>
<tr>
<td>b.</td>
<td>Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?</td>
</tr>
<tr>
<td>c.</td>
<td>Does the relevant legislation in your country specify adequate minimum safety and health requirements?</td>
</tr>
<tr>
<td>d.</td>
<td>Otherwise, what changes are needed?</td>
</tr>
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</table>

**Response:**

<p>| | |</p>
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</thead>
<tbody>
<tr>
<td><strong>Response:</strong></td>
<td><strong>Sources of evidence:</strong></td>
</tr>
<tr>
<td>a &amp; b.</td>
<td>Currently going through a change. Feels that the approach used (public consultation) is positive.</td>
</tr>
<tr>
<td>The changes are limited to the oil and gas exploration/production sector only. Would expect the new regulations to be adapted to apply to other minerals in the future.</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Yes</td>
</tr>
<tr>
<td>d.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
39. Are changes needed in Directive 92/91/EEC?

a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
c. Does the directive specify adequate minimum safety and health requirements?
d. Is it consistently interpreted among the Member States?
e. Is the directive free of other significant gaps?
f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
g. Otherwise, what changes are needed?

Response:

Since the transposition of Directive 92/91/EEC, a fair amount of other H&S related directives have been transposed e.g. ATEX/PED etc.
The directives do not apply offshore but have been particularly useful onshore. The content/experience of using those directives could be used to improve Directive 92/91/EEC.

Advocates for an improvement in knowledge/information sharing initiatives across the EU (as currently happens with the UK). Suggests the mechanisms used under SEVESO II directive would also be useful – the “Mutual Joint Visits” (MJV) initiative and the Technical Working Group initiative (both EU funded).

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?

a. What would be the cumulative effect of the changes?
b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

Improve group knowledge / access to technical support.

Sources of evidence:

V.12.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?

a. Please outline the administrative burden implementing the directive in your country.
b. What (if any) objective measures are available to evaluate the burden?
c. Are any changes needed to minimise it?

Response:

No real issues here. Not seen as burdensome to HSA. Might change in the future with the CER.

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: 
See previous response.

Sources of evidence:

V.12.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: 
An EU Regulation applies equally in all MSs and applies on the day it comes into effect. This ensures all MSs have the same legislative regime. On the other hand an EU directive has to be transposed into national law in each MS who can lay down their own requirements. The EU Regulation ensures greater uniformity of standards.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: 
No response.

Sources of evidence:
45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Sees the goal-setting approach as appropriate for all climates/geographies/conditions. However, harsher conditions present particular challenges in terms of limited response capability/support infrastructure that will need to be specially addressed.</em></td>
<td></td>
</tr>
</tbody>
</table>

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

- What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
- What options are used in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>See previous responses.</em></td>
<td></td>
</tr>
</tbody>
</table>

**V.12.11 Other issues**

47. Please add any other comments that you consider relevant to the objectives of the study.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/A.</td>
<td><em>Source reference(s)</em></td>
</tr>
</tbody>
</table>

**V.12.12 Attached Information**

No further information
V.13. NOTES FROM INTERVIEW WITH:

Operator
PSE Kinsale Energy Ltd

from

Ireland
V.13.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>PSE Kinsale Energy Ltd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Operator</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Ireland</td>
</tr>
</tbody>
</table>

V.13.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning )?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

   Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

   Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6.

   Sources of evidence:
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Session started at Question 6.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

Sources of evidence:

V.13.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response:

Introductory notes/presentation

The session started with a short presentation on that outlined the activities and operations PSE Kinsale Energy are involved in Ireland. The following sets outs a brief summary of the key points of the presentation:

- PSE Kinsale is the only operator in Ireland and currently operates Ireland’s only producing gas field (no oil).
- The development concept involves the use of two fixed platforms: Alpha and Bravo. Both platforms were fully manned in the past, but now Alpha is manned and Bravo is unmanned.
- Total workforce is ~ 60 including employees, contractors etc.. Crew transfers are done via helicopters and the provisions exists to also conduct transfers via boat.
- The field is in shallow water.
- The organisation also operates the gas field as a gas storage facility to cover winter peak demand.
- PSE Kinsale also runs a small gas processing terminal onshore. Located next door to the facility is distribution terminal that is owned by the state.

Responses to Question 6.

- PSE Kinsale has not conducted any drilling activity since 2002/3.
- Current operational field life is about 5 – 10 years (with possible extensions). The gas storage facility might run for longer. It was acknowledged that the economic drivers behind both operations are different: Gas prices for the latter + utility
7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

   Response:
   *Currently, all production activity is offshore and is gas related.*
   *Some onshore licensing activity (for prospecting) is going on at the moment with a view to starting a few years from now.*

   Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

   Response:
   *All private sector.*

   Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

   Response:
   *Figures provided below refer specifically to Kinsale Energy Limited operations;*
   a. *No fatalities have been experience in the last 10 years*
   b. *N/A*
   c. *Two first aid injuries in the last year*
   d. *~ 24 employees, 12 – 13 per shift*

   On the whole, believes that PSE Kinsale has an excellent safety record.

   Sources of evidence:
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

- **Piper Alpha.**
- **The 1989 regulations came into force after this incident and are based on the Cullen report. These regulations apply both of and onshore.**
- **The framework H&S act applies both off/onshore. There are also offshore specific regulations and most of the onshore regulations apply offshore.**

Remarked that there have been no significant incidents in the Irish offshore industry.

Sources of evidence:

---

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response:

- **The 2007 general application regulations (which apply both off/onshore) address occupational H&S issues such as Noise, Chemicals and Radiation.**
- **These were mostly developed for the onshore process industries (due to high level of activity), but also apply offshore.**

Anthony has offered to supply data on this aspect as well.

General information published by HSA forwarded to Mark Boult on 2nd May.

Sources of evidence:

---

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

- **Transposed into Statutory Instrument 467 (S.I. 467).**
- **includes references to other Acts for definitions (e.g. the H&S at work act 2005).**
- **It is fairly similar to the directive. No significant differences between the directive and S.I. 467.**

Sources of evidence:
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:

The legislation transposing the directive forms a part of the wider legislative framework. More specifically, it sits under the 2005 H&S at work act.

NB. The Irish regulations are structured as follows:

In the Irish legal framework, there are two types of legislation: primary and secondary. Items of primary legislation are termed “Acts” and are promulgated by parliament. Secondary legislation (typically in the form of statutory instruments) is promulgated by persons (e.g. ministers) or bodies (e.g. regulatory agencies) to whom rule-making power has been delegated.

There is currently some work being undertaken to develop/improve the regulatory framework. The key drivers for this are:

- To address the perceived absence of the safety case regime.
- Required improvements to the permitting regime.

It is envisaged that the new regulations will apply retrospectively (and will thus apply to Kinsale assets).

Remarked that the Energy Miscellaneous Act (2006) that applies to the downstream sector element requires a safety case for all downstream facilities (which include gas storage. For this reason, Kinsale developed a safety case for its gas storage facility but also extended the safety case to include the production facilities as well.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:

Both, the newly proposed safety case regulations make the MAH concept more explicit.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:

Both.

The overall framework act (2005 H&S) uses a goal-setting approach i.e. Identify risks and put in place measures to manage them. This is supplemented by sector specific regulations that are prescriptive in nature and enforce the 1987 act (for example on issues like EER).

The prescriptive elements are not currently being reviewed as part of the current update and hence it is anticipated that these will still apply.

Sources of evidence:
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>The 2005 Act includes a legal requirement for:</td>
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<tr>
<td>- safety reps.</td>
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<tr>
<td>- safety committee.</td>
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<tr>
<td>- Reporting of incidents and accidents to the HSA.</td>
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<tr>
<td>Furthermore...</td>
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<tr>
<td>- Kinsale also has a formal reporting system that covers near misses etc.</td>
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<tr>
<td>- The workforce can also make anonymous reports to the HAS.</td>
<td></td>
</tr>
<tr>
<td>Also stated that the turnover is low due to the small scale of operation. This has helped to create a highly tight knit culture in the workforce. One that is open and transparent. It has also resulted in a highly experience workforce.</td>
<td></td>
</tr>
<tr>
<td>All workers have SWA (not just the safety rep). This is rarely used as the culture ensures that most issues are highlighted and addresses further up the line.</td>
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</tbody>
</table>

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

<table>
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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>N/A</td>
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</tbody>
</table>

18. What non-legislative guidance is used / available in your country?

| a. | What non-legislative guidance is available (if any)? |
| b. | To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health? |
| c. | By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)? |

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>The HSA develops a number of guidance documents. These are largely generic in nature and do not specifically address the offshore industry. Also they tend to cover Occ. H&amp;S issues.</td>
<td></td>
</tr>
<tr>
<td>Indicated that they draw on wider sources (such as the UK HSE and CAA) for offshore specific issues.</td>
<td></td>
</tr>
<tr>
<td>Internal corporate standards are also a key source of information together with an extensive set of SOP’s that have developed with Kinsale over the years.</td>
<td></td>
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</tbody>
</table>
V.13.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

The regulations do not discriminate between different types of hazard but rather require the duty holder/responsible person to address all hazards, for all situations.
The risks (and any key risks) to be managed should be identified within the risk assessment.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

Sees the regulations as applying when the facility is connected to anything that contains HC’s. Hence, movement will be covered by maritime law. On location will be covered by the regulations. Any connected activity (e.g. lifts) is understood to be covered.

Can you please expand on the breakpoint that applies? E.g. is it based on when the facility is in the safety zone, or when it is anchored, or when it attached to the well?

Breakpoint not clearly defined in the legislation. In practice, break point interpreted as provided in the reply above.

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

SBV’s are governed by Maritime law. However they need to fulfil certain additional requirements to act as SBV’s and this aspect is administered by the Department of Transport.

Decommissioning activities are not currently covered but the new updates will address this gap.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

Sees shale gas drilling as not covered.

Sources of evidence:
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:
- **Gas storage is covered by the Energy 2006 Act.**
- **Perceives there is a lack of regulation that specifically addresses CO₂ transport and storage.**
- **The gas defined in the current legislation is restricted to HC gas and hence does not see CO₂ as being covered.**

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

*The definition of the workplace is given in the Safety, Health and Welfare at Work Act 2005 as follows:*  

_The “place of work” includes any, or any part of any, place (whether or not within or forming part of a building or structure), land or other location at, in, upon or near which, work is carried on whether occasionally or otherwise and in particular includes—*_

- **a.** in relation to an extractive industry including exploration activity, the whole area intended to house workstations to which employees have access for the purpose of their work relating to the immediate and ancillary activities and installations of, as appropriate—
  - (i) the surface or, as the case may be, underground extractive industry, including overburden dumps and other tips and any accommodation that is provided and, in the case of the underground extractive industry, any working area,
  - (ii) the extractive industry through drilling onshore including any accommodation that is provided, and
  - (iii) the extractive industry through drilling offshore, including any accommodation that is provided,
- **b.** a tent, trailer, temporary structure or movable structure, and
- **c.** a vehicle, vessel or aircraft

_Based on the definition above, in Ireland, the transportation of workers is covered._  

_Remarked that helicopter operations are currently contracted out to a 3rd party provider - Bond helicopters. Hence, joint responsibility for the safety of workers lies with both parties._

**On diving...**
- **There are specific regulations that govern diving activities as follows:**  
- **Diving activities are also managed under the safety case regulations (as part of the permit to work system)**
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

The “operator” is understood to be the person responsible for all workers, even contractors. Note that Kinsale is the sole licensee for most of the assets (own 100% except for one) and is the sole operator. Hence, in the current case Kinsale will effectively be the employer in all cases.

Furthermore...

In Ireland, the definition of the employer is given in the Safety, Health and Welfare At Work Act, 2005 as follows:

“employer”, in relation to an employee—

a. means the person with whom the employee has entered into or for whom the employee works under (or, where the employment has ceased, entered into or worked under) a contract of employment,

b. includes a person (other than an employee of that person) under whose control and direction an employee works, and

c. includes where appropriate, the successor of the employer or an associated employer of the employer;

Sources of evidence:
Safety, Health and Welfare At Work Act, 2005

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

- Remarked that the safety case is submitted to the CER for approval.
- It is reviewed every five years.
- It has currently been through two review cycles. A revised was approved earlier in the year. Understands a change of ownership to be the key driver for the most recent update.
- Also stated that there are guidelines given by the CER as to what would prompt a change e.g. the installation of a new module/organisational change BUT this is largely judgement based.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or a subject to independent/peer review? If so, how is this achieved?

Response:

Remarked that the following procedures are used/apply:

- An internal verification scheme for risk assessments and similar studies.
- Third party review for design and construction activities.

Sources of evidence:
28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:

The safety case is reviewed by the CER and formally approved. The review process involves dialogue/discussion between both parties. (Note that MAH are the emphasis of the safety case regime). It was also remarked that the CER engage the services of a 3rd party consultant to aid the review process (KOIL – Keane Offshore Integrity Ltd).

A “safety statement” which also addresses Occ. H&S issues, is also required however this is not submitted for formal review/acceptance. The HSA conduct routine visits and may comment on the safety statement.

NB The safety statement is a legal requirement of all employers

- it covers all hazards – Occ. H&S and MAH.
- Can refer to other documents.
- Not an analytical document but rather one that outlines how the key risks have been managed.
- Also describes the safety management system in place.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:


The above are largely prescriptive and clearly outline what is needed and what must be done.

The regulations require operators to develop an emergency response procedure and that usually involves coordinating activities with other organisations. Not clear as to whether this implies that third parties are actually covered by the legislation.

Remarked that there will be a certain degree of judgement as to where the breakpoint actually occurs/the extent of the scope. What happens if a helicopter involved in rescue operation crashes on the way to the hospital?

Sources of evidence:
30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

*Sees the legislation as not being discriminatory in any regard and treats everyone equally. The offshore workforce is mixed.*

*There are also special provisions to safeguard the health of vulnerable personnel e.g. pregnant women.*

Sources of evidence:

V.13.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

- Enforcement activity is administered/undertaken by two organisations- the HSA and the CER.
- The HSA tend to focus primarily on Occ. H&S issues however this focus is not exclusive and they also look at other risks (e.g. MAH).
- The CER as a direct consequence of their administering the safety case regime are perceived as the key authority with regard to MAH aspects. They also visit the installation as part of the review of the safety case.

*All visits are planned (i.e. there are no unannounced/unplanned visits due to the practical requirements to schedule helicopter flights in advance). However the HSA have the authority to carry out unannounced visits.*

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

*HSA enforcement of H&S is perceived to be active and effective in general. The HAS has a high public profile in Ireland and are very proactive in enforcing H&S legislation. The HAS administers SEVESO and other related onshore legislation and thus have a lot of experience they can bring to bear offshore.*

*The CER is still new and hence lacks the profile characteristic of the HSA. The CER is currently building its enforcement expertise.*

*Remarked that the fragmentation in of enforcement activity across multiple organisations creates some practical challenges particularly in the licensing arena.*

Sources of evidence:
33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response: Perceives the operator to be legally responsible. The operator also arranges the visits.

V.13.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

- Considered to be very effective in safeguarding the H&S of workers in this sector.
- It sets out clear guidelines on what needs to be achieved.
- Roles and responsibilities are clearly defined in the legislation.
- Enforcement activity by the HSA is seen to be robust (they issue notices etc.

Commented that the HSA will have objective data/statistics that will corroborate the above. The risk level/accident rate in the industry compares favourably with other sectors. Construction and farming are known to be worse.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response: Perceives the relevant legislation to be effective and has no knowledge of a serious incident has occurred in Irish waters either from drilling / production activities.

Also see response in Question 34.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?

b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: Perceives the directive to play a significant role as it acts as a framework / umbrella that brings all the relevant legislation together.

Also perceives the directive to play a key role in addressing MAH issues as

Sources of evidence:
opposed to Occ. H&S. However the approaches used in other countries for MAH have been a key influence in this regard.

- Also sees the legislation that existed before the directive as playing a key role. Some new regulations have also been developed in the aftermath of the transposition of the directive.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

**Practical difficulties**

- Remarked that the effort to fulfil legislative provisions is considerable, but currently ok, especially on the operations side.

**The planning and permitting regime can be problematic/challenging (resulting in confusion/delays).**

**Positive effects**

Sets out clear requirements to address all risks and clarifies responsibilities.

Also responses in Question 34.

**Negative effects**

As outlined in the practical difficulties above. Nothing additional specifically identifiable

**Impact on SME’s**

- Some SME’s have experience difficulty in demonstrating they can achieve/meet the requirements to engage in offshore activity. This has acted as a barrier to entry and largely stems from the relatively small magnitude of the industry.

- There currently exists a limited pool of service providers that has developed over the years and is sufficient for the needs of the industry.

Sources of evidence:
V.13.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
   • Would like to see better clarity/definition in the roles and responsibilities of the HSA, CER and the DCENR who all enforce safety aspects (or elements of safety). The multi-agency approach poses more challenges in the planning phase than in actual operations.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
   • The provisions within the directive can be better clarified as they are currently perceived to be too high-level
   • Would also like to see better definition in the scope of allocation i.e. where and when it applies.
   • Does not see the need for additional legislation from the EU when the existing ones are fit for purpose. This would only add layers of bureaucracy/cause disruption.
   • Suggests that the approach followed by the commission (DG Energy) would be better if it had adopted a gap analysis/incremental approach to implement the changes required rather than initiating a wholesale/complete change.
   • Would also like to see shale gas/CO2 regulated in a manner similar to traditional oil and gas. Any regulatory activity needs to adequately reflect the balance between societal risk and economic considerations.
   e. Does not see any significant gaps in the directive.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: 
See previous responses.

Sources of evidence:

V.13.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
- Not explicitly quantified, but accounts for a significant element of on-going operations and HES support (training, compliance, reporting etc.).
- Also expressed concern regarding level of future costs for state/regulatory activities to be levied back to the industry; (proposed in new PEES framework).

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
N/A. See response to Question 41.

Sources of evidence:
### Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefers a directive as it is more flexible. It allows legislators the flexibility required to transpose it into national legislation.</td>
<td></td>
</tr>
</tbody>
</table>

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would like to see the local interests/concerns within the smaller countries being considered e.g. via a dialogue/consultation process. This is not currently the case with the new regulation process.</td>
<td></td>
</tr>
<tr>
<td>Would also like to think that the new countries draw on expertise from the more mature ones both in terms of resources and regulatory expertise.</td>
<td></td>
</tr>
</tbody>
</table>

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>As long the directive adopts a goal-based approach, the issue of locations of application is irrelevant as the goals will have to be met</td>
<td></td>
</tr>
</tbody>
</table>
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
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<tbody>
<tr>
<td>See previous responses.</td>
<td></td>
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</table>

V.13.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
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<tbody>
<tr>
<td>N/A</td>
<td></td>
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</table>

V.13.12 Attached Information

No further information.
V.14. NOTES FROM INTERVIEW WITH:

Industry
Trade Association and Shell

from

Ireland
V.14.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Trade Association and Shell</th>
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</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Industry</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Ireland</td>
</tr>
</tbody>
</table>

V.14.2 Initial questions

Background/Initial Comments

The following comments were made at the start of the session (prior to the start of the question set)

- [Commenting on the regulators/enforcement authority] Sees a need for a clear definition of the roles and responsibilities [at the outset] of any parties with oversight responsibility as this is central to avoiding instances with overlapping responsibilities and duplication of effort (on the part of the regulator and the regulated party). The lack of clarity complicates the compliance process and thus represents a challenge to the industry (who want to comply).
- Sees this lack of clarity to be present at the EU level (between DG Energy and DG Employment) and also at local (National) level.
- In this regard, would like to see more consensus/cooperation/streamlining/harmonisation in approaches used by responsible authorities.

The following was given in response to questions 1 to 5

- Following on the above, reiterated the need for alignment/collaboration between the various DG’s as to how the industry should be regulated. Suggested that this can be approached via a position paper from the EC that clearly addresses and outlines the scope of both the directive and the new proposed offshore regulations.
- In terms of what regulations they work with in regard to drilling activity, highlighted that the UK regulations form the basis/starting point of all compliance activity (as most rigs will come from the UK). A gap analysis versus the Irish regulations is then conducted to ensure that any specific local requirements are also complied with. Remarked that such an undertaking can be significant for small organisations.
- Internal management systems also play a key role in ensuring/supporting compliance with relevant regulations.
- Espoused the need for guidance documents as there is (currently) a lack of guidance documentation to aid understanding of/compliance with the regulations.
- Indicates the industry has a desire to comply with the relevant legislation but there are barriers in place that impede this (e.g. lack of clarity, overlap, guidance).
  - The industry does not want to break the rules; it just wants to know what they are so that they can be complied with.
  - In this regard, smaller outfits and the less mature regulators need to be supported.

Welcomes the new regulatory framework being proposed by the CER and sees this as a implementing current best practice BUT would like to see some alignment between all legislation – National and EU (92/91 and the proposed offshore regulations).

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?

c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?

d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO$_2$ injection, CCS and fracking?

Response: See previous responses.

2. How effective is the relevant legislation in your country?

a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.


Response: See previous responses.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?

a. To national legislation.

b. To Directive 92/91/EEC.

Response: See previous responses.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: See previous responses.

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: See previous responses.

V.14.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?
d. Extent and plans for other “extraction through drilling activities”.

<table>
<thead>
<tr>
<th>Response:</th>
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<tbody>
<tr>
<td>b. Currently, 1-2 exploration wells are drilled per year. Expects this to increase/trend to go upwards on the back of the recent (2011) round of two year licensing options. Development wells will be based on how successful explorations wells are. The Corrib project has 8 development wells of which 5 will be used for production activity.</td>
</tr>
<tr>
<td>c. The Kinsale and Seven Heads fields are the only currently operational facility and only produce gas (a limited amount). No oil is produced. There has been a recent oil discovery off the west coast (by Providence Resources)</td>
</tr>
<tr>
<td>d. Indicated that fracking activity is likely to start in a couple of years’ time by Tamboran Resources. It (i.e. fracking) was not explicitly included in the new regulations at the outset but it is now currently included.</td>
</tr>
<tr>
<td>• This move is welcomed as it clarifies which activities are regulated and those that are not.</td>
</tr>
<tr>
<td>The following additional remarks were made:</td>
</tr>
<tr>
<td>• Sees no merit in having different approaches between countries. For example in Ireland, a safety statement is required by all employers (and not required in the UK). This requirement also applies where there is a network of employers as is typical in the industry for e.g. If an oil company has contracted a Rig Contractor who in turn has contracted other parties, all members of the chain are required to have safety statements under existing Irish Legislation.</td>
</tr>
<tr>
<td>• Would like to see a rig which is approved in UK or Norway also being approved in Ireland.</td>
</tr>
<tr>
<td>• Indicates that the differences that exist create barriers to entry, particularly for smaller players. Would like to see consistency in approaches. Perceives differences as creating uncertainty (which can be detrimental to safety) and making compliance more difficult.</td>
</tr>
<tr>
<td>Considers the differences in environments across the EU as presenting a key argument for adoption of a goal-setting approach.</td>
</tr>
</tbody>
</table>

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?

<table>
<thead>
<tr>
<th>Response:</th>
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<tbody>
<tr>
<td>a. Proportions of exploration &amp; development wells drilled onshore and offshore.</td>
</tr>
<tr>
<td>b. Proportions of oil &amp; gas production onshore and offshore.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Currently all offshore.</td>
</tr>
<tr>
<td>May change in a couple of years if fracking activity proves successful.</td>
</tr>
</tbody>
</table>

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

<table>
<thead>
<tr>
<th>Response:</th>
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<tbody>
<tr>
<td>All private sector.</td>
</tr>
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</table>

Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

   **Response:**
   *Not aware of any fatalities in the last ten years. Indicates that the low level of activity may be a contributing factor.*

   **Sources of evidence:**

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

   **Response:**
   *Large organisations offer the potential to bring learning’s from global operations;*

   **Sources of evidence:**

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

   **Response:**
   *N/A*

   **Sources of evidence:**

**V.14.4 Regulatory approach**

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: Yes.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
- Perceives the HSA as being focussed on Occupational. H&S issues (and some MAH); the CER largely address MAH issues; the Department of Transport and the Department of Environment, Community and Local Government are the principal responsible Departments. Key Acts are the 2005 Safety, Health and Welfare at Work Act and the Safety, Health and Welfare at Work (General Application) Regulations, 2007.
- Would like the Regulators to come together to address any areas of overlap and clarify roles and responsibilities (i.e. who is responsible for administering respective element of the regulations and to minimise duplicate activities & reporting).

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
- Currently prescriptive, but is in transition to a goal–setting regime with the new regulations.

Sources of evidence:
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:
Perceives the new regulations (the petroleum safety framework) as including provisions to foster and encourage a safety culture.

- The development of the new regulations is adopting a consultative approach across a wide range of stakeholders so as to ensure all voices are heard and can contribute to the new regulations.

Remarked that more can be done to develop a safety culture. Suggests that incentives could be developed to encourage safe behaviour.

Would also like to see more collaboration between all parties as this is central to developing a safety culture.

Also commented that consultation and participation of employees and safety committees are currently provisioned for within the 2005 Act.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:
N/A

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:
The HSA has some guidance on the framework H&S legislation; the CER are developing guidance on the new petroleum safety framework.

Sources of evidence:

V.14.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?
Response:

*Understands all hazards to be addressed / covered in all situations. However, blowouts are specifically mentioned within the Irish regulations and thus could be seen to represent a special source of hazard.*

*Considers Occ. H&S issues to be adequately addressed but other critical issues are now getting more focus by the CER via the Petroleum Safety Framework, in particular MAH.*

Sources of evidence:

---

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

*Transit is governed by maritime law. When the rig is on locations (i.e. once anchored) the national legislation applies.*

Sources of evidence:

---

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

*SBV’s are governed by the current regulations (part of well operations by the Regulator prior to operations commencement. Under the current regime multiple vessels can be used during operations. Decommissioning activity will be explicitly addressed by the new regulations. The existing regulations just require a description of how decommissioning will take place.*

Sources of evidence:

---

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

*See earlier response.*

Sources of evidence:

---

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

*Unclear / not sure as to how these aspects are currently governed and whether they fall under the scope of 92/91. Would expect CCS to be covered under 92/91.*

Sources of evidence:

---

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

*Understands the workplace to include the rig/facility as well as transport by helicopter and by vessels.*

Sources of evidence:
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

Perceives the definition of employer to reflect the traditional use of the term (i.e. the employer who employs employees). NB This definition form the basis of the safety statement.

Sees the JV to be responsible, although the JV will appoint an operator who will be responsible for day-to-day operations. Not aware of any requirement similar to the “see-to-it-duty” in Norway (i.e. hierarchy of responsibility starting from the licensee and cascading downwards).

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

No response provided.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:

Remarked that a verification scheme is in place/ required for offshore and onshore pipelines and onshore terminals.

Also stated that there is an independent verification body to conduct verification activities. The auditor checks aspects/elements including but not limited to the SMS, SC, BOP certification and maintenance records etc. after which he/she issues a letter of acceptance (or otherwise) to the operator and the department.

The verification activities also include well activities.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:

See previous responses.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

Yes. It covers all personnel involved.

The legislation includes requirements to develop EER plans in concert with all involved parties (e.g. coast-guard etc.)

Sources of evidence:
30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

Key requirement to go offshore is to be medically fit (i.e. not put other people in danger).

Not aware of any elements of the legislation that are discriminatory.

Sources of evidence:

V.14.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

- The HSA may visit MODUs to conduct audits.
- The new regulation will also set out inspection regimes/protocols that will apply. It is expected that they will include annual audits.
- On the whole, sees the approach as delivering versus its objectives.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

See previous responses.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

See previous responses.

Sources of evidence:

V.14.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

With particular reference to regulations and how they operate, the Industry currently operates to standards equal to or in excess of what the regulations require. Safety is viewed as the number 1 priority.

The high standards employed by Industry are informed by experience of the global regulatory environment and the learning’s from incidents within the industry.

Any potential gaps in the legislation are being addressed by the new regulations which are being updated to reflect best practice regulatory approaches.

Sources of evidence:
### 35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

- **a.** How successful (in your opinion) is the implementation of the relevant legislation in your country?
- **b.** What (if any) objective measures are available to show its effectiveness?
- **c.** Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sees “clarity in the regulations” and the “avoidance of overlap” as key elements that are essential to the effectiveness of the regulations. Would like to see these elements inform the development of regulations at both the national and EU level. As an example would like the DG’s to come together to address any potential areas of overlap between the directive and the proposed offshore regulations. Also advocates for more constant follow up of the transposition process by the EU (to aid consistency) as well the development of guidance documents to aid the transposition process.</td>
<td></td>
</tr>
</tbody>
</table>

### 36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

- **a.** Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
- **b.** Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
- **c.** Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.</td>
<td></td>
</tr>
</tbody>
</table>

### 37. Please mention any other relevant issues from the practical application of the relevant legislation:

- **a.** Any notable difficulties in the practical application?
- **b.** Any unexpected positive effects?
- **c.** Any unintended (or unexpected) negative effects?
- **d.** Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
- **e.** Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.</td>
<td></td>
</tr>
</tbody>
</table>
V.14.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:  
As noted earlier, perceives the new (i.e. proposed) Irish regulations as addressing any gaps in the existing regulatory framework. 
It appears that environmental consequences will not be included (explicitly) within the new regulations.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:  
As noted earlier would like to see clarity and avoidance of overlap in the relevant legislation.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:  
As noted earlier would like to see clarity and avoidance of overlap in the relevant legislation.

Sources of evidence:
V.14.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
Commenting on the current audit process used by the DCENR:
The DCENR hires a competent body to conduct audits.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

V.14.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:
Prefers a directive approach. Sees regulations as unnecessarily increasing the bureaucratic burden which may be detrimental to existing safety regimes.

Sources of evidence:
44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

   **Response:**
   *Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.*

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

   **Response:**
   *With regards to working in more challenging areas, does not perceive this to be an issue as long as the equipment used is adequately specified to reflect the conditions / working environment. For example only rigs designed to work in deep water should be used for deep water operations.*

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

   **Response:**
   *Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.*

V.14.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

   **Response:**
   *Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.*

V.14.12 Attached Information

No further information.
V.15. NOTES FROM INTERVIEW WITH:

Union Services Industrial Professional and Technical Union (SIPTU) Irish Congress of Trades Unions

from

Ireland
V.15.1 Demographic Questions

| Organisation: | SIPTU (Services Industrial Professional and Technical Union)  
Irish Congress of Trades Unions |
<table>
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<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Ireland</td>
</tr>
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</table>

V.15.2 Response to Questions

The question set was used as a general framework guidance document to inform the scope of the interview. The questions were not answered as outlined but rather an open ended approach was adopted. For this reason the discussions are presented in a different format to those of other interviews.

The following notes summarises the interview discussions:

**Introductory remarks/comments**

*The session started with an open discussion that focussed on the background/context of the Irish Oil and Gas industry with a particular emphasis on the experience of the workers. Here the following remarks / comments were made:*

- *The national offshore committee of SIPTU is the key union that addresses issues relating to offshore exploration and extraction in Ireland. It is the largest union in Ireland.*

- *Considers the Irish workforce to be currently marginalised/absent in the Irish offshore drilling industry. Sees Irish workers as having a low participation rate. Drilling rigs work in Irish waters with limited or no Irish workers.*
  - *The Maastricht treaty is often used to justify this BUT the crews have been observed to also include personnel from outside the EU.*
  - *Lack of experience is also used as a justification BUT argues that this is unfounded as a healthy mix of experienced and inexperienced workers are needed to ensure good safety.*

- *Expressed a deep lack of faith/confidence in the PAD (Petroleum Affairs Division) of the DCNER (Department of Communication, Energy and Natural Resources) in their role of enforcing safety in exploration and extraction activities in Irish waters. Considers the division to be more passive than active/proactive. Also considers the division to rely heavily on the testimony of the industry without conducting verifications checks of its own.*

- *Highlights that the Irish workforce in the drilling industry has dwindled over time BUT expects an increase in activity due to the recent discoveries.*

- *Perceives safety on drilling rigs as being inadequate and improperly supervised.*

- *Considers the regulatory regime to have a lot of shortcomings particular in the licensing regime and holds that the nation’s resources have been handed over to the industry without satisfactory oversight. Sees the states attitude to industry as servile/pliant, and subservient (towards the industry).*
Commenting on what legislative provisions or otherwise that exists to promote a safety culture amongst the workforce (question 16)…

- Indicated that the Irish workforce has had limited participation in drilling activity in recent years (see previous) and thus this is an area that will be difficult to provide insights to/on. The drilling activity conducted by Providence drilling in the Kinsale area was conducted without Irish participation.

Also made the following remarks on the issue of union engagement…

- Going forward would also like to see the workforce being engaged with on safety related issues (something that does not currently exist).

- Would like the EU to institute a social dialogue for this sector at the macro level and particularly on safety matters. Such a dialogue should be formalised so as to allow for on going review.

- At the local level, indicated that they (i.e. the unions) have not been directly consulted on the new regulatory framework being delivered by the CER. Also stated that the CER consults widely using a public consultation model that employs vague and ambiguous language (that doesn’t support engagement from the unions).

- Would like the CER to adopt the model used by the HSA which is set up as a tri-partite body and where the unions have input on key issues. Remarked that if the new regulations were being developed by the HSA, the unions would have been consulted.

The following additional remarks on the oil industry and the regulatory framework were made…

- Expressed concern as to the fact that the CER has been tasked with administering safety despite its clear lack of experience of expertise in that regard. Considers the CER to be a energy regulator and not a safety regulator.

- The Corrib project is seen as not providing benefits to Ireland but rather to the oil industry and to the EU (for security of energy supply considerations). Sees pressure from EU as potential trumping safety/environmental concerns of local people.

- Expresses concerns as to the developmental approach employed for the Corrib project i.e. onshore control of sub-sea wells. Sees this as an experimental set-up that is can prove to be problematic.

- Also sees the state pandering/being sympathetic to oil companies on most issues, safety inclusive (i.e. the state has been effectively captured by the industry). Sees an over-reliance on industry knowledge such that the role of the state has been reduced to one of rubber-stamping/passive endorsement.

- Advocates for a stronger regulatory framework (one that involves the voice of the unions) as a means to remedying this situation.

- Also considers the industry antics as enforcing the notion that “the state needs the industry more than industry needs the state”

- Also contends that the government has paid little attention to the highly lucrative spin-offs associated with the industry to its own detriment/loss.

- Would also like to see more engagement at the local level as this is key to preventing social dumping i.e. local people (due to vested interests) can help identify and stop bad practice.
Commenting on the involvement of a 3rd party independent provider in state regulation activity…

- Perceives the approach to lacks true independence and thus can be easily compromised.
- Also expresses concern that the provider is perceived to be sympathetic to the oil industry concerns and has a close relationship with the oil companies.
- The system appears as if the state has derogated its duties to the industry.
- Espouses for the creation of a stand-alone agency to regulate all HSE concerns in the industry (as is the case in other North Sea countries e.g. Norway). Expresses concern that after 30 years, it is still unclear as to who regulates what. The agency should have independent experts that address all key issues – environment, safety etc.

Commenting on the regulatory approaches used by the EU (i.e. Regulation versus Directive)…

- In light of the perceive weaknesses of the current regulatory regime would prefer a regulation approach as this will give more substance (teeth) to the enforcement agency. Furthermore, sees breaches as easier to address under a regulation as opposed to a directive.
- Also sees the directive approach as giving more room for manoeuvre/flexible manipulation (by the industry) and thus advocates for a regulation.
- Also sees a regulation as forcing the state to take more responsibility/play a more active role.
- Advocates that the development of either (i.e. regulation or directive) should be aided by a social dialogue process.
- A regulation is perceived to be one way of helping/supporting the current framework which is perceived to be weak/deficient.

Additional remarks…

- Recognises that the preference for a regulation approach stems from the context/situation that is specific to Ireland at the current time and might not be suitable in other countries.
- Also recognises that the rationale for a regulation stems from a lack of trust/confidence in the current regime. Going forward, would like to see more transparency/widespread engagement/social dialogue by the state in how it conducts its affairs in this sector.

V.15.3 Attached Information

No further information.
V.16. NOTES FROM INTERVIEW WITH:

Combined – Regulators, Industry and Unions
Ministry of Economic Development (UNMIG), Assomineraria, eni, Enel, Edison, Shell, Medoilgas Italia, union representative

from

Italy
V.16.1 Demographic Questions

| Organisation: | Ministry of Economic Development (UNMIG), Assomineraria, eni, Enel, Edison, Shell, Medoilgas Italia, union representative |
| Stakeholder type: | Combined – Regulators, Industry and Unions |
| (e.g. Government/Regulator, Trade association/Operator, Union, NGO) |
| EU/EEA country/counts in which your organisation operates: | Italy |

V.16.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO\textsubscript{2} injection, CCS and fracking?

Response:

It applies to all parties and activities above mentioned, even though for emerging technologies it does not include specific requirements and at present there isn’t a specific regulation for ”emerging technologies”. In Italy such activities do not take place or at least they are at an experimental stage.

Sources of evidence:

D.Lgs. 624/96

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response:

Both of them are effective for oil & gas activities, and strictly interconnected.

Sources of evidence:

D.Lgs. 81/08
D.Lgs. 624/96

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.
Response:

When looking at the nature of Deepwater Horizon accident and the source of hazard (drilling operations) no specific changes are envisaged; as a normal practice, all well operations programs and designs are submitted to the Competent Authority for authorisation. By chance, operations like those being executed in the reservoir of Macondo (deep water, oil, HP/HT) are not envisaged in Italy.

Sources of evidence:

DM. 4.3.2011
D.D. 22.3.2011

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:

In our opinion, and taking into consideration the well consolidated offshore safety regime in Italy, it is largely advisable that the content of the draft European regulation will be transferred into the Directive 92/91/EEC rather than being issued as a regulation stand alone, in order to avoid duplication of standards and confusion.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:

The effectiveness of a "goal-setting" legislation is guaranteed by clarity and simplicity: few statements with clear expectations. Any guidelines and improvement initiatives may only result in limitation in the Operator’s responsibility.

Our legislation is quite clear: reduce risks to a minimum level by adopting the best available technologies. The way to do this is fully charged to the Operator.

Sources of evidence:

V.16.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?

d. Extent and plans for other “extraction through drilling activities”.

Response:

Data disclosure is done through the website http://unmig.sviluppoeconomico.gov.it which, along with information on administrative processes under way, provides a set of data of general interest such as hydrocarbons production, royalties paid by companies to the Government, regions and municipalities, reflection and refraction seismic surveys, wells and oil-rigs list.

Most relevant data (production, licenses, and projects) related to the geographical area or with the local marine area of reference are supervised by “Local Monitoring” and “Sea monitoring” set up on a local scale.

Sources of evidence:

Website
http://unmig.sviluppoeconomico.gov.it

Annual Report 2011
Department for Energy
General Direction for Mining and Energetic Resources
In 2011 drilling activities have been 37, for an amount of 55,810 meters drilled:

- 1 exploration well.
- 4 development wells.
- 23 work over.
- 9 wells for reservoir gas storage.

As regards the oil & gas production, in 2011 oil & gas production was:

- 5.2 Mil Tons (Oil) – (4.6 Onshore; 0.6 Offshore)
- 8.300 Mil Smc (gas) – (2.3 Onshore; 6 Offshore)
For the future years new production projects, both onshore and offshore are scheduled to start; they will interest the construction of new mining facilities and pipeline networks.
7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

**Mining rights (31 December 2010)**
117 exploration permits (out of which 92 are onshore and 25 offshore)
198 exploitation licenses (out of which 132 onshore and 66 offshore).

**Mining rights (31 December 2011)**
121 exploration permits (out of which 96 are onshore and 25 offshore)
199 exploitation licenses (out of which 133 onshore and 66 offshore).

As regards the proportions of exploration & development wells drilled onshore and offshore:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Exploration</th>
<th>Development</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Onshore</td>
<td>Offshore</td>
</tr>
<tr>
<td></td>
<td>Nr wells</td>
<td>%</td>
</tr>
<tr>
<td>1991</td>
<td>35</td>
<td>58%</td>
</tr>
<tr>
<td>1992</td>
<td>29</td>
<td>66%</td>
</tr>
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<td>2011</td>
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Sources of evidence:
- Annual Report 2011
- Department for Energy
- General Direction for Mining and Energetic Resources
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

### OIL National production - 1995-2011

<table>
<thead>
<tr>
<th>YEAR</th>
<th>GAS (Sm³ x 10⁹)</th>
<th>OIL (t x 10⁶)</th>
<th>OIL National production- 1995-2011</th>
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<tr>
<td></td>
<td>Onshore</td>
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<td>Total</td>
</tr>
<tr>
<td>1991</td>
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<td>3.6</td>
<td>15.5</td>
<td>19.2</td>
</tr>
<tr>
<td>1999</td>
<td>3.3</td>
<td>14.3</td>
<td>17.6</td>
</tr>
<tr>
<td>2000</td>
<td>3.7</td>
<td>13.1</td>
<td>16.8</td>
</tr>
<tr>
<td>2001</td>
<td>2.8</td>
<td>12.1</td>
<td>14.9</td>
</tr>
<tr>
<td>2002</td>
<td>2.7</td>
<td>11.3</td>
<td>14.0</td>
</tr>
<tr>
<td>2003</td>
<td>2.4</td>
<td>10.5</td>
<td>12.9</td>
</tr>
<tr>
<td>2004</td>
<td>2.4</td>
<td>9.5</td>
<td>12.0</td>
</tr>
<tr>
<td>2005</td>
<td>2.3</td>
<td>8.5</td>
<td>10.8</td>
</tr>
<tr>
<td>2006</td>
<td>2.3</td>
<td>8.5</td>
<td>10.8</td>
</tr>
<tr>
<td>2007</td>
<td>2.4</td>
<td>7.3</td>
<td>9.6</td>
</tr>
<tr>
<td>2008</td>
<td>2.3</td>
<td>6.8</td>
<td>9.1</td>
</tr>
<tr>
<td>2009</td>
<td>2.0</td>
<td>5.9</td>
<td>7.9</td>
</tr>
<tr>
<td>2010</td>
<td>2.1</td>
<td>5.8</td>
<td>7.9</td>
</tr>
<tr>
<td>2011</td>
<td>2.3</td>
<td>6.0</td>
<td>8.3</td>
</tr>
</tbody>
</table>

Note: A mining licensed area is defined according to criteria established by law, usually a...
few square kilometres. It is an area where only the holder can operate and is much higher than that actually occupied by plants (well areas, power plants and processing facilities), usually a few hectares. Territories falling within a mining right are therefore not affected by exploration and extraction except for small areas with granted permission where take place operations.

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:
*Onshore or offshore hydrocarbons exploiting mines belong to the inalienable asset of the State that releases exploration permits and exploitation concessions to applicant companies even in joint-venture.*

Sources of evidence:
Website http://unmig.sviluppoeconomico.gov.it

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

- Trend (and number) of fatalities over the last 10 years.
- Causes of death.
- Number of injuries in the most recent year.
- Number of people employed.
- Please provide data sources (if available).

Response:
*In hydrocarbons exploration, production and storage, during 2011 there were a total of 28 accidents, none of them fatal. 12 out of them are classified as severe (with a prognosis of more than 30 days) and 16 non-serious.*

<table>
<thead>
<tr>
<th>Drilling</th>
<th>1995</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meters drilled</td>
<td>137,565</td>
<td>70,080</td>
<td>80,521</td>
<td>56,640</td>
<td>55,810</td>
</tr>
<tr>
<td>Accidents</td>
<td>121</td>
<td>25</td>
<td>24</td>
<td>12</td>
<td>13</td>
</tr>
<tr>
<td>Aggregate index (accidents/meters drilled)</td>
<td>0,00088</td>
<td>0,00036</td>
<td>0,00030</td>
<td>0,00021</td>
<td>0,00023</td>
</tr>
<tr>
<td>Variation respect to 1995</td>
<td>-59%</td>
<td>-66%</td>
<td>-76%</td>
<td>-74%</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Production</th>
<th>1995</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas (billion of St. cubic meters)</td>
<td>20,4</td>
<td>9,1</td>
<td>7,9</td>
<td>7,9</td>
<td>8,3</td>
</tr>
<tr>
<td>Oil (millions of ton)</td>
<td>5,2</td>
<td>5,2</td>
<td>4,5</td>
<td>5,1</td>
<td>5,3</td>
</tr>
<tr>
<td>Total (millions of toe) (*)</td>
<td>21,520</td>
<td>12,480</td>
<td>10,820</td>
<td>11,420</td>
<td>11,940</td>
</tr>
<tr>
<td>Accidents</td>
<td>125</td>
<td>40</td>
<td>27</td>
<td>35</td>
<td>15</td>
</tr>
<tr>
<td>Aggregate index (accidents/toe)</td>
<td>5.81</td>
<td>3.21</td>
<td>2.50</td>
<td>3.06</td>
<td>1.26</td>
</tr>
<tr>
<td>Variation respect to 1995</td>
<td>-45%</td>
<td>-57%</td>
<td>-47%</td>
<td>-78%</td>
<td></td>
</tr>
</tbody>
</table>

(*) 1 Mm³ di gas = 800 toe

The information contained in the diagram shows a reduction rate accident compared to last year with a nearly increasing production for gas and oil. As for drill also accidents rate reduced significantly compared to the previous year.

It can be useful to make a comparison with the year 1995, a period of relevant upstream activities development and previous coming into effect of the D. Legislative Decree 624/96. In particular there is a percentage reduction for the year 2011 drilling accidents rate up to -74%.
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

One significant lesson learned from the blowout of Trecate 24 well (onshore) occurred in 1994: it has been requested all Operators by law (D.Lgs. 624/96) to equip all wells with Shear Rams, without distinction between onshore and offshore operations (as far as we know this is a “very Italian” improvement, since after an accurate benchmarking carried out by the Competent Authority, the Shear Rams abroad were compulsory only for offshore operations carried out from a mobile drilling unit).

We can show the outstanding achievement of “0” Blow-outs in the period 2000-2010 in the Italian Onshore and Offshore well operation activities.

Sources of evidence:

- D.Lgs. 624/96
- Industry statistics

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response:

Highly sensitive data, as occupational illnesses are dealt in the penal code For this reason; they are fully investigated in order to ascertain their effective occupational illness nature. Currently, no significant event of this nature has occurred.

Sources of evidence:

- Data from occupational health and safety departments
- Industry statistics

V.16.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

In the 1996, the Directive 92/91/EEC was transposed and implemented through the legislative decree 624/96. It wasn’t a mere transposition of the Directive 92/91/EEC, but it was rather an integration and enrichment of the previous Italian Legislation.

In fact the previous Italian Legislation (prior to the implementation of the Directive 92/91/EEC) about the mineral extraction through drilling was based on the following Decrees:

- DPR 128/59
- DPR 886/79 (application to the offshore field)

The Directive 92/91/EEC together with the 92/104/EEC has been put into force by the

Sources of evidence:

- Legislative decree 624/96
- DPR 128/59
- DPR 886/79
D.Lgs. 624/1996 enclosed in D. Lgs. 626/1994 and following D. Lgs. 242/1996 as for mining aspects and mining safety mainly for operators furtherly ruled by DPR 128/1959 and 886/1979. Besides the aforesaid laws, it was issued the D. Lgs. 81/2008( Unique safety Law for all workplaces in coordination with all the relevant mining regulations)

It is worthwhile to mention that, among the peculiarities of the Legislative Decree 624/96 there are some aspects that are not commonly envisaged in other Member States mining safety legislation. In particular:

- A specific “regime” for simultaneous operations (declaration of risk increasing);
- The fact that construction activities carried out within a mining concession are considered as “mining activities” and included in the authorisation process;
- The management of shared contracted activities via a “coordination plan” and the assessment of “coordination risks”;
- The appointment of an organisational structure devoted to the application of safety rules and coordination of concurrent activities, consisting of: a Direttore Responsabile (high level position directly reporting to the Titolare, or Concession Holder), and a number of Sorveglianti (on shift duty) who are more than simply Supervisors, since they have the right to by-pass the organisation and report directly to the Concession Holder in case of imminent hazard or infractions. In case of accidents, the inquiry is addressed to both the Direttore Responsabile and the Sorveglianti at a first instance, and they may be prosecuted in case of negligence.

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:

The previous Italian Regulation (before the implementation of the Directive 92/91/EEC) about the mineral extraction through drilling was based on the following Decrees:

- DPR 128/59
- DPR 886/79 (application to the offshore field)

Here below a rough list (not exhaustive) of the wider safety and health legislative framework where the Directive 92/91/EEC has been integrated:

- Italian Legislative Decree no. 624 of 25.11.96  
  “Implementation of Directive 92/91/EEC concerning the minimum requirements for improving the safety and health protection of workers in the mineral-extracting industries through drilling and Directive 92/104/EEC concerning the minimum requirements for improving the safety and health protection of workers in surface and underground mineral-extracting industries”

- Italian Presidential Decree no. 128 of 09 April 1959  
  “Police regulations for mines and quarries” As amended by It. Leg. Decree no. 624/96

- Italian Presidential Decree no. 886 of 24 May 1979  
  “Integration and adaptation of the police regulations of mines and quarries contained in Italian Presidential Decree no. 128 of 09.04.1959, in order to regulate the activities of prospecting, research and exploitation of hydrocarbons in territorial waters and on the continental shelf” As amended by It. Leg. Decree no. 624/96

- Italian Legislative Decree no. 81 of 09.04.2008 and subs. amendments and
14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
It is important to spend some words on the definition of “Major Hazard”. The definition of UK OSCR Regulation 1995 is, in our opinion, is unclear (and quite out dated, having been set up 18 years ago, before Texas City and Macondo); it defines a list of events that partly refer to “major accident hazards” and partly to “occupational safety”. For example, a fire resulting in a single fatality or a serious injury, the collision of a helicopter with an installation, a failure of life support system in a diving operation and an event causing multiple serious personal injuries are all events that are generally treated as occupational safety ones. This is not just an Italian position, but is commonly accepted in several international contexts by most of the Majors. If you are familiar with a matrix approach, events like these fall in the row 4 of the matrix (“death or permanent disability of one person or a small group of people, generally no more than 5); major accidents, on the contrary, fall in the row 5 (“multiple fatalities, generally more than 5”).

Having this in mind, we can say that our legislation fully covers “occupational safety” issues.

As far as “major accidents” (new definition) is concerned, we can say that the “COMAH” (“Seveso”) directive, transposed in Italy as D.Lgs. 334/99 and following amendments (mainly “Seveso Ter”), is fully applied to No. 9 upstream sites onshore, due to the high capacity of crude oil storage tanks. Another Italian peculiarity, in fact, is that the oil storage falls within the pursuance of the D.Lgs. 624/96. We know that other Member States, on the contrary, set the boundaries of facilities pertaining to the “mining” domain at the outlet of the treatment plant units, and the storage tanks are physically installed within the refinery fence.

As you know, the COMAH does not apply to offshore activities. In Italy, adopting the definition above, we can affirm that the most commonly experienced offshore events (including “blowouts”), as “occupational safety” events, are covered by D.Lgs. 624/96.

To reinforce the statement, as mentioned before, Italian offshore activities engage a very limited amount of people (most of the plants are unmanned type) and the probability of an event that could result in more than 5 fatalities is practically negligible.

It is important to mention that the legislative focus of D.LLgs. 81/2008 and 624/96 is on “ALL” risks, that means there is no criteria to exclude some risks by virtue of their significance.

Note (abstract from Art. 10 Italian Legislative Decree no. 624/96)
The Health and Safety Document (HSD), practically equivalent to the HSE Case, referred to in articles 6 and 9 shall contain an assessment of the workplace risks in relation to the activity performed and the consequent identification of the operative measures and terms, indicating in particular the solutions adopted, or the absence of risk, for each of the following items:

a. protection against fires, explosions and explosive or hazardous atmospheres;
b. means of evacuation and rescue;
c. communication, warning and alarm systems;
d. health surveillance;
e. plans for systematic inspections, maintenance and testing of equipment, instrumentation and mechanical, electrical and electromechanical systems;
f. safety material maintenance;
g. utilisation and maintenance of pressurised containers;
h. use and maintenance of means of transport;
i. safety drill;
j. .... ;
k. .... ;
l. .... ;
m. ventilation arrangements;
n. areas subject to immediate release of gases, flooding and rockslide;
o. evacuation of personnel;
p. organisation of rescue services;
q. deployment of suitable safety equipment in order to prevent risk of blowouts, measures for the control of extraction mud and emergency measures in the event of blow-out;
r. safety devices and operational precautions for drilling with fluids other than mud;
s. deployment of explosives;
t. possible plans for simultaneous activities;
u. criteria for the emergency situation training;
v. specific measures for modular plants;
w. use of remote control in the case of emergency;
x. indication of safe meeting points;
y. availability of hyperbaric chamber;
z. protection of accommodation areas from fire and explosion risks;

OPERATOR SHALL PREPARE:

An Health and Safety Document (in compliance with Italian Legislative Decrees no. 624/96 and 81/2008 and subsequent amendments and additions)

The Health and Safety Document is a living document in compliance with directives on the protection and health of workers and on workplace safety, envisaged by lt. Leg. Decree No. 624/96 art. 26, by lt. Leg. Decree 81/08 and subsequent amendments and additions and by current laws enforced by the Mining Police.

It shall illustrate the work site, the corporate organisational structure of both the Concession Holder and Contractors, risk analysis and assessment methods, operating measures for prevention and protection associated with specific simultaneous activities at the platform with the drilling rig.

The aim of the document is to identify and disclose risks related to phases discussed in this
document, and to highlight situations requiring special attention. What aforesaid in order to better define measures that must be adopted to ensure worker health and psycho-physical integrity also by optimising the organisation and management of the specific Work site.

The coordination implementation measures and methods shall be applied as specified in the coordination papers contained in the CHSD (Coordinated Health and Safety Document).

Performance of small-scale and/or short-duration contracted activities shall be regulated by a specific Service Order that is previously issued by the Direttore Responsabile on the basis of guidelines contained in this CHSD.

The drilling and production Sorvegliante designated by the Concession Holder shall ensure surveillance of the operations as for worker safety and they must be present at the worksite around the clock.

MODALITY FOR ANALYSING AND ASSESSING THE RISK

The risk assessment follows some fundamental steps:

- preliminary, in-depth identification of the HSE risks
- formal risk assessment
- Definition of a prevention program and the protection measures to be adopted.

Considering the complexity, heterogeneity and different standards applicable to the specific work environment, the risk assessment modalities require differentiation into three separate but mutually complementary analysis:

a. ASSESSMENT OF RISKS GOVERNED BY D.LGS. 81/08 and subsequent amendments and additions (s.a.a.):

The assessment of task risks in compliance with art. 28 of D.Lgs. 81/08 takes into consideration the risks typical of those jobs which, while within a mining context, do not differ from those typical of any labour activity. The results of the risk assessment, the actions aimed at making said risks acceptable, and the improvement plan are contained in the risk assessment document for the workplace (DVR).

The method of analysis and evaluation adopted makes reference to a specific procedure which outlines the approach to be used to identify and assess HSE-related risks and, if necessary, ensure that they are made acceptable (as already said, a matrix criteria).

More specifically, the following criteria are to be followed in assessing the risks and identifying the appropriate prevention and protection measures:

- compliance with the laws in force, in order to improve health and safety in the workplace; this requires the following actions:
  A. appointing the persons envisaged by the law- in- force
  B. arranging documentation and measures required by the laws in force
  C. evaluating the risk factors
  D. adopting suitable safety measures
  E. training and informing the workers.

- Monitoring changes in the organisation and identifying new sources of danger and potential risks. Updating the risk assessment and prevention and protection measures to reflect any changes in the organisation and technical evolution in prevention and protection systems;

- Eliminating risks through knowledge acquired on the basis of technical progress and, where this is not possible, reducing these risks to a minimum.

- Reducing the risks at the source.

- Prevention programming focusing on a set that coherently integrates prevention
into the corporate production- and organisation-related technical conditions and which considers the effect of work place related factors (in summary, adopting an Health & Safety Management System).

- Replacing everything that is dangerous with what is not, or is less dangerous.
- Ensuring compliance with the principles of ergonomics when conceiving the workstations, in the choice of equipment and in defining the work and production methods as well as reducing job monotony and repetitiveness.
- Ensuring that collective protection measures have priority over personal protection measures.
- Limiting to a minimum the number of workers who are or could be, exposed to the risk.
- Making a limited use of chemical, physical and biological agents in the workplace.
- Controlling worker health according to the specific risks.
- Removing the worker from exposure to the risk for personal health reasons.
- Adopting suitable hygiene measures.
- Adopting suitable collective and personal protection measures.
- Implementing the emergency measures to be used for first aid, fire-fighting, worker evacuation or serious, immediate danger.
- Using warning and safety signals.
- Ensuring regular maintenance of the environments, equipment, machinery and plants, with particular focus on safety devices and performed according to manufacturer indications.
- Ensuring training, education, consultation and participation of the workers or their representatives in questions related to health and safety in the workplace.
- Providing the workers with adequate training.

### b. ASSESSMENT OF “MINING” RISK:

It takes into consideration the specific risks of mining activities. The results of the risk assessment, the actions aimed at making said risk acceptable, and the improvement plan are contained in the ”mining risk” section of the Health & Safety Document. The ”mining” risk considers risks in mining activities (systems, operations and specific operating phases) in order to identify any countermeasures required and to provide the on-site workers involved in the aforesaid activities with adequate information on the risks.

The assessment of the mining risk is generally based on the following:

- Analysis of prevention and protection “barriers” according to the list under Question 14;
- Process description (it should be considered that the Project Management process already includes a risk-based approach, like HAZID, HAZOP, EER (Escape, Evacuation and Rescue Analysis), Gas Dispersion Studies and so on. The basis for design and detailed engineering of safety systems (fire fighting, F&G etc.) are submitted to the Competent Authority for approval.

### c. RISK ASSESSMENT FOR CONTRACTED ACTIVITIES:

This part describes the objective, measures and modalities used to coordinate outsourced activities performed within the work site in order to assess the risks derived from the whole of activities and the relevant prevention and protection measures.

As for activities related to seismic and exploration and exploitation drilling, pursuant to art. 9 of R. Leg. Decree 624/96, the work is generally assigned to contractors. Also in this case,
the concession holder (client) has full accountability to assess the risks resulting from overall activities and related prevention and protection measures, and to draft a Coordinated Health and Safety Document. To this end each contractor shall provide the concession holder with his own documentation.

The concession holder is required to promote coordination and cooperation among the individual contractors and subcontractors working at any site where he is responsible. On the other hand, the law requires every contractor who assigns his employees to work at sites owned by the concession holder to guarantee their safety and health and to perform risk assessments that take into account interactions between contracted activities and all other activities under contract with the concession holder at the same work site. Each contractor is required to inform all other contractors and the concession holder about any potential risks associated with his activity and the prevention measures to be undertaken. In addition, the concession holder shall amend and update the Health & Safety Document whenever a contractor or subcontractor changes and distribute this information to all other contractors.

In short, every worksite is considered as a complex network where all workers, no matter if company staff or contractor / subcontractor, even though the contractor enters the site for a small / marginal activity without interference with the others, are made fully aware of risks coming from all surrounding activities, in order to put into place a communication grid (via pre-job meetings, coordination meetings, supervision etc.) and coordinated efforts to face those risks.

To ensure uniform modalities and contents in the documentation required by the concession holder, in order to prepare the Coordinated Health and Safety Document or promote cooperation and coordination among the individual contractors, each contractor shall draft its own HSD. The contractor’s representative who signs the Coordinated Health and Safety Document identifies and assesses contractor’s risks for each sub-activity involved in the work to be performed at the concession holder’s site and then signs the form (the signature of his Employer is requested).

The Health and Safety Document format, conceived to meet legal requirements, involves the contractor’s most representative parties (e.g. the contractor’s HSE manager and contractor’s line superintendents, who signs a dedicated register in order to demonstrate that all shifts are duly covered ) in order to raise site worker awareness of the risk assessment and implementation of coordination-related countermeasures.

The involvement of Competent Authorities, operators and contractors during the years after the entering into force of D.Lgs. 624/96, led to a common approach with the adoption of standardised modalities, which are detailed below:

during the bidding phase:

- Each Contractor fills out the so called, FORM A where the Contractor's representative indicates, activity by activity, the risks and signs on the relevant box;

at the kick-off meeting:

- Each Contractor, having received a map of concurrent risks, including those generated by the company (by receiving the, so called, FORM B), and a set of papers requiring detailed information on risk limitation measures and procedures, presents all these documents duly filled;

during contract award:

- Coordination meetings are planned on site under the responsibility of the Sorvegliante (nominated by the Concession Holder) in order to make all contractors acquainted with concurrent risks and coordinate the implementation of risk reduction measures against interference risks;
- A Permit-to-Work system is applied to any single activity;
EXPLANATORY NOTES

The planning of concurrent activities requires a deep analysis in order to identify any intervention necessary to minimise interference risks.

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:

The Italian Legislation adopts a goal-setting approach. The operator is fully responsible (at its highest management level) of the risk assessment and implementation of risk reduction measures. He trusts on an organisation duly appointed to guarantee planning and implementation of the risk reduction measures. In particular:

- The D.Lgs. 81/2008 foresees two different roles: the “Dirigente” (planning) and the “Preposto” (execution);
- The D. Lgs. 624/96 foresees two different roles: the” Direttore Responsabile” (planning) and the “Sorvegliante” (execution).

In a licensed area, before receiving an authorisation (consent) to start an activity, the concession holder shall submit the request to the Competent Authority; the request form shall include the Health and Safety Document for that activity.

The Competent Authority carries out an analysis pursuant to the requirements of the D.Lgs. 624/96 (in terms of completeness and consistency, NOT in terms of contents) and, in case no objections arise, releases the authorisation.

In case of significant accident, the Competent Authority is in charge of the inquiry and, as a first step, acquires all information deriving from the Health and Safety Document to understand if the concession holder organisation has included the under laying causes in the risk assessment and taken all necessary measures to prevent its occurrence.

Sources of evidence:
D.Lgs. 624/96

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

The Safety Labour Representatives (RLSA) are consulted during periodic meetings held for each work site as outlined in art. 35 of It. Leg. Decree no. 81 dated 09 April 2008 and subsequent amendments and additions and art. 8 of It. Leg. Decree 624/96.

During these meetings problems for these areas will be discussed as follows:

- Workers health and safety.
- Information and training activities/schedules.
- Identification of any areas for improvement.

Note (abstract from Italian Mining Decrees)
D.LGS 624/96  Art. 8 - Risk prevention and protection meetings
1. The periodical meeting referred to in article 11 of decree law n. 626 issued in 1994 must be held for each workplace containing more than 5 workers.
2. During the meeting the SHD, specified in article 6 or article 9, and its subsequent
revisions must be examined.

3. In order to carry out their duties, the safety representatives shall have access to the SHD referred to in art. 6 and 9.

4. The employer is required forward the minutes of the meeting indicated in paragraph 1. to the enforcing authority.

Apart from legislative requirements a safety culture is, obtained with a number of voluntary initiatives, among which:

- Adoption of an HSE Integrated Management System (OHSAS 18001 like) that covers: process auditing; objectives and targets; procedures and standards; training and competency; leadership, commitment and accountability;
- Safety Award Schemes aimed at reducing injuries, incidents and near misses;
- Tripartite consultations (Employer, RLSA, Operator’s Associations and Authorities).

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: There are no differences.

Sources of evidence:
- D.Lgs. 624/96
- D.Lgs. 81/2008

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: As for It. Leg. Decree 81/08

- Guidelines UNI-INAIL.
- British Standard OHSAS 18001:2007 can be followed to create a safety and health management system

For the environmental management system a non-legislative guidance is used:

- UNI EN ISO 14001

Most of the Italian E&P operators have the following experience:

- Adoption of ISO 14001 and OHSAS 18001 management philosophy in all Districts and at the Headquarters;
- Certification of HSE Management Systems at HQ and District level according to ISO 14001 and OHSAS 18001 standards.
- Multi-year planning for second party (HQ) technical audit to all Italian Districts and Subsidiaries as far as the application of their HSE Management System is

Sources of evidence:
- Italian Legislative Decree no. 81 of 09.04.2008 and subs. amendments and additions
V.16.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:
The D.Lgs. 624/96 contains a list of “special source of hazards” that are expected to be managed by the Direttore Responsabile, who is appointed to an autonomously issue, the so called “Ordini di Servizio” (Work Orders or Special Instructions) in order to handle special cases as absolute priorities. Some of those work orders are submitted to a surveying authority that can issue some prescription variations.

In particular:

- Explosive and toxic atmospheres;
- Written instructions for activities to be carried out either in hazardous conditions or non-hazardous situations that, when interacting with others, may induce a major risk (Art. 23); these instructions shall specify precautions to be met before, during and after the job (usually this written instructions are delivered through a work permit – PTW – system).
- Use of explosives (near to the intervention point and immediately before their use: Art. 35); appointment of qualified personnel for explosives use;
- Use of personnel baskets and other mechanical devices for personnel transfer (Art. 47);
- Communications in case of well blowout to Civil Protection and Mining Authorities;
- Presence on site, 24h/day, in case of simultaneous operations (Art. 76);
- Activation of remote controls in case of emergency from safe havens and muster points;
- Heliport/helideck emergency services (fire fighting and casualties transportation).

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:
It covers all the mining activities that are not formally excluded by law. For example the movement of the drilling rig in the Italian seas is covered by the Navigation Laws.

Sources of evidence:
DPR 886/79 Art. 9.
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

All parts of the production process are covered by the Italian Decree for Mining Activities, including:

- Detailed Engineering (see below)
- Construction of fixed and mobile offshore installations and subsea pipelines
- Simultaneous Operations (see below)
- Stand-by vessels
- Decommissioning
- Etc.

Note (abstract of the Italian Mining Decrees about the administrative and authorisation process to be followed)

D LGS 624/96 Art. 84 - Presentation of projects

1. Projects for plants destined to the production, collection, transport, treatment and first transformation of extracted minerals which must necessarily be used on site and in direct relation to the producing fields, are to be submitted by the owner to the competent enforcing authority, in a duplicate copy as far as the fire prevention measures are concerned; the project must be accompanied by an explicit declaration by the project engineer declaring that have been fully and completely observed the provisions about design criteria and safety, duly listed, the provisions mentioned in the decrees of the President of the Republic n.128, issued in 1959 and n.886 1979, those provisions contained in the latter act and the relevant contents of the SHD.

2. The enforcing authority will forward a copy of the project i.e. the section about measures for fire prevention and protection, to the competent provincial fire brigade office for their approval of the project. Such approval is given with particular reference to the provisions of the present decree and to the decrees issued by the ministry of the interior on 31/7/1934, published in edition n. 228 of the Law Gazette of the Republic on 28/9/1934 and on 24/11/1984 in the ordinary supplement of the Official Gazette of the Republic edition n. 12 dated 15/1/1985 with subsequent modifications and integrations.

3. The approval referred to in paragraph 2 shall be issued within 90 days from project receiving.

4. As prescribed by paragraph 2, examination of the project by the Provincial fire brigade office falls within those services described in law n.966 dated 26/7/65 and the costs are charged to the owner.

5. The enforcing authority can issue prescriptions or require modifications to the project, where the latter does not suit in an adequate manner the approved development and mining plan.

6. On acquiring the approval referred to in paragraph 2, the enforcing authority may authorise the construction works.

Art. 85 - Inspection and testing of plants

1. The inspection and verification of conformity to fire prevention and protection measures, carried out on the basis of what is established in the project, the present act and, particularly, the contents of the specific SHD, and where necessary the relative testing, is performed by a senior member or officer of the enforcing authority together with the chief fire officer of the province or a technical office designated by him.
2. The approval of the conformity of measures implemented and testing of the fire prevention system, documented by the report of proceedings, is also valid for the purposes of obtaining the fire prevention certificate from the provincial fire brigade, where the same should be legally required.

3. The procedures referred to in paragraphs 1 and 2 are applicable in cases of significant modification to the plant subject to the discretion of the enforcing authority.

4. Authorisation to begin production and run the plant is given by the enforcing authority after carrying out the inspection and testing of conformity, which must be performed within 60 days of the date of the owner’s request on completion of works.

5. At the expiry of the aforesaid term, the enforcing authority reserves the right, in consideration of the urgency, to issue a provisional authorisation to run the plant subject to the presentation of an explicit declaration, undersigned by the owner that the works and safety measures have been implemented in accordance with the project; such a declaration must be accompanied by a statement showing conformity for those plants referred to in points a, b, c, d, e, f, g of article 1 of law n.46 dated 5/3/96.

   Art. 76 - Simultaneous operations

1. The term simultaneous operations means all operations which are performed at the same time by the same site or platform for the exploration and mining of a deposit; such operations, in addition to the drilling, include production, work-over, welding and cutting works or in any case the use of naked flames and movement of loads that are susceptible to cause damage to equipment and plants.

2. The owner who wants to perform simultaneous operations is required to request authorisation from the enforcing authority and has to present a work schedule which includes:

   a. the well drilling program;
   b. the schedule for the well works;
   c. special operations to be performed.

3. The work schedule referred to in paragraph 2 must be modified or updated each time simultaneous actions are planned which vary significantly from those specified in the general operating plan.

4. The owner must ensure that the general program of operations to be conducted simultaneously is included in the SHD; in particular, he has to ensure that there is no increase in risk to the personnel, the structure, the environment and the deposit itself deriving from the simultaneous performance of different activities.

5. During the simultaneous performance of different activities, the operations manager must be present on the work site.

6. In the case of operations at sea, the operations manager also assumes the responsibility of chief platform and must delegate one Sorvegliante to cover the drilling and work-over operations and another Sorvegliante to cover the production activities.

7. The enforcing authority will obtain the views of the competent Fire Brigade office according to the measures prescribed for fire protection.
22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

Shale gas drilling and shale oil production should be carried out under current “mining legislation. The legislation applies to all activities that are not officially excluded.

As a matter of fact, the concern in this kind of activities lies on the methodology to carry out a risk assessment.

At the time being, in Italy there are no shale gas and oil fracturing activities.

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

See response to Question 22.

Sources of evidence:

Source reference(s)

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

D.LGS 624/96

Workplace: all areas designated as places of work where the activities are performed, including any housing facilities which the workers have access to during their working activity, the internal path network of the operation itself, the landfills and other deposit areas with the exclusion of those operations not directly related to the mining operation.

As per Art. 1 the Activities subjected to the D.LGS 624/96

a. Operations involving prospection, exploration and mining of mineral substances;

b. Operations carried out in plants connected to mining basically activities existing within the boundaries determined by exploration permits, concessions or authorisations;

c. Operations performed in plants which constitute part of the mine, as defined by article 23 of the Royal Charter n.1443, dated 29/7/1927, even if located outside the perimeter of the concession;

d. Works involving crushing, sieving, knobbyling and conveyance of quarry products and loading operations of these products from bays;

e. Activities involving prospection, exploration, mining and storage of hydrocarbon liquids and gases on national territory, territorial waters and on the continental shelf and other underwater areas subject to State jurisdiction.

The “Direttore Responsabile” and the “Sorvegliante” ensure full compliance with the Coordinated Health and Safety Document CHSD. They are always on-board during simultaneous onshore/offshore operations.

In the Coordinated Health and Safety Document are outlined specific requirements for the coordination of particular activities, such as the underwater works (diving and hyperbaric chambers).

Note (abstract of the Italian Mining Decrees about the helicopter, personnel movements and diving operations).

Sources of evidence:

D.LGS 624/96
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

In the organisational chart of the Health and Safety Document are defined the functions on the workplace and who has the responsibilities to prevention and protection against risks.

In particular, the D.lgs 624/96 and D.lgs 81/08 define different roles as here below indicated:

“Titolare”: he is the concession holder or licensee. He could be a natural or legal person, single or in joint-venture with other entities. In case of joint-venture association there is always a “Rappresentante Unico” who is the Operator

“Datore di Lavoro” : who has a job relationship with employees (“Lavoratore”)

“Contrattista – Subcontrattista” : they are appointed by the “Titolare” to perform, within the workplace, the works

“Lavoratore” : he is the employer who performs the works

The concession holder is the operator representative and holds the ultimate accountability for health and safety at the worksites, at the workplace and at the whole District or Subsidiary having jurisdiction in these sites, where D.lgs. 624/1996 provisions applies.

No other similar responsibility is envisaged by the D.Lgs. 81/2008 and D.Lgs. 624/96; as an example, Rig Owners are not entitled to be Operators in Italy.

On the other hand, each individual contractor and subcontractor has its own Employer, by virtue of D.Lgs. 81/2008 (Unique Safety Law). Contractor employers have their own accountability and responsibility in the framework of D.Lgs. 624/96 as well, but limited to the contracted activity and the countermeasures to be adopted against interfering risks at the workplace.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

The Health and Safety Document shall be updated for every modification of the approved project including the organisational changes related to personnel responsible in the safety surveillance, emergency response plan, etc.

Note (abstract of the Italian Mining Decree)

D. LG 624/96   Art. 6 - Health and Safety Document

The “Datore di Lavoro” shall revise the SHD whenever the place of work undergoes significant modification and, where the need arises, following a serious accident. A “major change” is a change in the process lifecycle.

Sources of evidence:
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
Oil Companies adopt an HSE Integrated Management System, possibly certified in compliance with the UNI EN ISO 14001:2004 for the environmental aspects and OHSAS 18001:2007 for the Health and Safety aspects: thanks to the systemic approach, work procedures and safety reports are subject to quality control (QC) and quality assurance (QA) before their official issue. Moreover oil companies usually adopt EMAS regulation Meetings about safety take place time by time. Besides personnel background update goes on.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
The Health and Safety Document is not subjected to the quality control by the Competent Authority since, as mentioned at point 15, they only ensure consistency and coherence with the law expectations and completeness of information. On the other hand, usually HQs, as independent second party, conduct technical audits to the HSE Management System and the HSD is part of the review.

Divisions II, III and IV of the Competent Authority organisation are the Department offices with technical and administrative management, control and supervision tasks of the hydrocarbons exploration and exploitation activities. The territorial jurisdiction is divided into:

- **II Division – Section U.N.M.I.G. of Bologna**: Piemonte, Liguria, Lombardia, Veneto, Friuli-Venezia Giulia, Emilia-Romagna and its territorial sea and continental shelf
- **III Divisione – Section U.N.M.I.G. of Rome**: Toscana, Umbria, Marche, Lazio, Abruzzo and Molise and its territorial sea and continental shelf
- **IV Divisione – Section U.N.M.I.G. of Naples**: Campania, Basilicata, Puglia and Calabria and its territorial sea and continental shelf.

As part of the work spent in the year 2011, we summarise some data:

<table>
<thead>
<tr>
<th>Activities</th>
<th>Exploitation verification</th>
<th>Checks</th>
<th>Inspections on drilling wells sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>79</td>
<td>3,766</td>
<td>150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Permissions</th>
<th>Geophysical activities</th>
<th>Authorization for new wells drilling and mining closing down</th>
<th>Beginning of work authorizations</th>
<th>Final work authorizations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>18</td>
<td>121</td>
<td>157</td>
<td>85</td>
</tr>
</tbody>
</table>

Authorisation for new well drilling, well permanent shut-in etc. implies more controls, covering good operations planning and assessment of specific requirements. The start of authorised works is directly related to final tests carried out together with other technical bodies (Fire Brigade, Harbour Authorities).

The Regulator, during technical-administrative surveys checks the compliance with the mitigation measures identified in the HSD.
29. Does the relevant legislation cover workers involved in rescue and recovery operations?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>The Italian Legislation covers the training of the personnel involved in the rescue and recovery operations.</td>
<td></td>
</tr>
<tr>
<td>It requires a specific course according to the level of fire risk of the activity.</td>
<td></td>
</tr>
<tr>
<td>Note (abstract of the Italian Mining Legislation)</td>
<td></td>
</tr>
<tr>
<td>D LGS 624/96 Art. 22 - Written instructions</td>
<td></td>
</tr>
<tr>
<td>For each place of work the employer shall make available written instructions, appropriately displayed and, where necessary, in different languages and comprehensible to all workers; these instructions must clearly indicate the measures to be adopted in the protection of the safety and health of workers and guarantee the correct use of materials in safe conditions in addition to the use of rescue equipment and actions to take in the event of an emergency on the worksite or immediate nearness.</td>
<td></td>
</tr>
<tr>
<td>D LGS 624/96 Art. 79 - Safety drills</td>
<td></td>
</tr>
<tr>
<td>1. Safety drills must be carried out on a regular basis in all work sites which are frequently used and during these sessions:</td>
<td></td>
</tr>
<tr>
<td>a. Those workers who have been assigned specific duties requiring them to handle, use and operate rescue equipment in addition to their capacity to perform certain tasks entrusted to them, shall be trained and evaluated; where possible, the workers should be able to practice using, handling and operating the aforesaid equipment;</td>
<td></td>
</tr>
<tr>
<td>b. All the rescue equipment used during the exercise shall be examined, cleaned and possibly refilled or replaced and all the portable equipment returned to their normal storage place;</td>
<td></td>
</tr>
<tr>
<td>c. The operation of survival craft, in the case of activities performed at sea, shall be verified.</td>
<td></td>
</tr>
<tr>
<td>D LGS 624/96 Art. 83 – Fire-fighting organisation and emergency plan</td>
<td></td>
</tr>
<tr>
<td>The employer shall organise a fire-fighting organisation, consisting of a chief and an emergency team, in those work areas permanently manned by workers.</td>
<td></td>
</tr>
</tbody>
</table>

30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>In terms of legislation, there is a specific article in D.Lgs. 81/2008 that deals with handicapped workers, pregnant women and so on. This is valid for all workplaces but, of course, architectural barriers cannot be removed in offshore locations.</td>
<td></td>
</tr>
<tr>
<td>By the way, it is common practice to adopt a Company Code of Conduct for human rights and Corporate Social Responsibility.</td>
<td></td>
</tr>
</tbody>
</table>
V.16.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

*Different Competent Authorities (Central and Peripheral) related to different kind of mineral resources are in charge of inspection and audit activities for any kind of activities which are under the regime provided by D.Lgs. 624/1996 and the other mentioned mining legislation.*

*The Unified Law according to D. Lgs. 81/2008 linked with D. Lgs. 624/1996, DPR 128/1959 and DPR 886/1979 includes all mining activities (usual and by drill) both offshore and onshore, drilling and exploitation, including also storage activities.*

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

*Existing legislation is strong enough to guarantee a high level of health and safety. It is carried out by a continuous verification (yearly) with stakeholders (companies and trade unions) to assess necessary changes for ruling set and safety papers.*

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

*The “Titolare” - see ref. Question 25.*

Sources of evidence:

V.16.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

*It covers the adoption of mining work place provided rules as well as operators health by making complaint and notices before the Civil Court about law infractions. It controls as well good practices and better technology rules for mining field’s exploitation, which are unalienable asset of the State.*

Sources of evidence:
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

   Response:
   It is very successful.

   The adequacy of the Italian legislation at the moment is witnessed by a drastic reduction in the number of accidents on sites (onshore and offshore), thanks to the control actions.

   Sources of evidence:
   See statistics n°9

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response:
   The Directive 92/91/EEC transposition took place by a specific rules system, taking in account previous ruling for the same subject and the Italian social uses and traditions about risk prevention and the best way to adopt.

   It is very effective in promoting safety and health, in Italy.

   Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

   Response:
   No relevant issues to mention.
   Everyone has to respect the rules for a specific judicial proceedings.
   Jack up and semi-submersible platforms, operating all over the world, are specifically checked in order to made them fit for Italian rules.
   This procedure is called “italianizzazione”.

   Sources of evidence:
   D.lgs 886/1979 Art. 81
   D.lgs 624/1996 Art.30
V.16.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
Italian ruling system conformed itself following to rigorous checking procedures carried out by mining authorities. Implementing system focuses on rules, requirements and checking.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
Considering how effective the Directive 92/91/EEC has been transposed, no change is being made. It is useful to know how such directive is transposed in other MS, to make possible upgrading. The aim is to get a unified EEC ruling system on health and safety in compliance with the content of the “Proposal for a Regulation on safety of offshore oil and gas prospection, exploration and production”.

After the Gulf of Mexico accident the Italian law conformed itself with a new more severe ruling system, even if the Italian seas do not have characteristics similar to the Gulf of Mexico one and its marine subsoil layer is quite different.

Sources of evidence:
D.M. 4/03/2011
D.D. 22/03/2011
40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: 
*See response to Question 39.*

Sources of evidence:

V.16.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: 
*It is not a matter of a “burden” as far as safety is concerned.*

The Italian law provides that in case of advertisements for bids safety costs must be described in detail. The “burden” is the safety paper peculiar deposit procedure made by every contractor or employer or in the case of a coordinated paper for workers coming from different countries; anyway whereas the aim is the improvement of safety degree it is not necessary to deem it as a “burden”.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: 
*See response to Question 41.*

Sources of evidence:
V.16.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:
A regulation would directly and immediately applicable to all EU countries, while a directive should be transposed, and this could create differences in application and different degrees of accuracy.

In Italy we are very satisfied with the current laws and how they have been transposed, often in a more restrictive way.

It will be useful to evaluate the existing laws in all the MS, validate it, choose a text as much comprehensive as possible, making any necessary additions. In this context, we believe the Italian legislation can be used as a draft.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:
Yes, it is.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:
See response to Question 44.

Sources of evidence:
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

   **Response:** See response to Question 44.
   **Sources of evidence:**

**V.16.11 Other issues**

47. Please add any other comments that you consider relevant to the objectives of the study.

   **Response:** As Italian Authority we reserve the possibility to implement further comments to technical documents, in terms of regulation or directive, after collection of interviews and assessment of the legislation level in every country of the E.C., taking into consideration also the positions of non-EU countries on the Mediterranean sea.
   **Sources of evidence:**

**V.16.12 Attached Information**

No further information.
V.17. NOTES FROM INTERVIEW WITH:

Regulator
State Supervisors of Mines, Ministry of Economic Affairs, Agriculture and Innovation
from
Netherlands
V.17.1  Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>State Supervisions of Mines, Ministry of Economic Affairs, Agriculture and Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Regulator</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade</td>
<td></td>
</tr>
<tr>
<td>association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counties in which your</td>
<td>Netherlands</td>
</tr>
<tr>
<td>organisation operates:</td>
<td></td>
</tr>
</tbody>
</table>

V.17.2  Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6 below.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6 below.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6 below.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: Sources of evidence:
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:
N/A. Session started at Question 6 below.

Sources of evidence:

V.17.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response:
Oil and Gas
In terms of Oil and Gas activity, the Netherlands is a mature country and there is a decline in E&P activity (as is the case in most of the North Sea). The current state policy in the sector is to encourage/stimulate development in marginal fields.

The Netherlands is a significant gas exporter and has extensive gas infrastructure. The plan for the future is position the country as a Gas bank for Europe. Depleted fields (salt domes or gas fields) will be used for gas storage.

Gas storage activity is taken to fall under the scope of the national legislation (and by implication, Directive 92/91/EEC) as the process will involve some drilling activity.

Geothermal
Recently, there has been an increase in the number wells drilled for geothermal activity. The state is trying to stimulate/increase activity in this area. Licenses are issued by the Ministry (which is completely separate from the SSM).

Geothermal wells are typically 2-3 km deep and the extracted water is at a temperature of around 50 – 60 °C. The mining act regulates all activity 50m below the surface; hence this is regulated in the same way as traditional Oil and Gas activity.

There have been some issues in the geothermal industry where the operators (typically very small outfits usually green-house companies) involved are not aware of the risks associated with flammable compounds but have encountered hydrocarbons at the surface. This had led to an increase in regulatory attention in the area. The SSM now spends about 20% of its time regulating geothermal activity and the focus of regulatory activity is on ensuring the competence of the operators (the drilling contractors are screened / seen to be competent). Significant emphasis has also been placed on educating the operators on the risks associated with hydrocarbons.

CO₂ related activity
Extraction of shale gas is a possibility in the future. This is currently a topic of discussion/debate in the country.

CO₂ storage projects onshore have been cancelled as a result of public pressure/strong...
Disapproval. Offshore storage is still under consideration. A demonstration/test case is in progress.

### 7. What is the balance of activity between offshore and onshore industries in your country?

a. Proportions of exploration & development wells drilled onshore and offshore.
b. Proportions of oil & gas production onshore and offshore.

**Response:**

NB. More information can be found at www.nlog.nl.

**Oil and Gas**

Almost all hydrocarbon extraction is gas; there is very limited oil production.

Gas in the Netherlands is sourced from a series of several small fields and a single large field – the Groningen gas field – which is one of the largest in the world (and the largest in Europe)

Gas from the “small” fields are a key contributor to overall gas production in the Netherlands, and accounted for 32.2BCM in 2010 (approx. 40% of the total gas production). 2/3rds of the small fields gas was from offshore fields and the rest onshore. (NOGEPA Annual Report 2010).

The Netherlands has in the region of 1700 production wells offshore (NSOAF report). Of the order of 25 to 30 wells are drilled per year (split equally between exploration and production).

As noted earlier, the state’s policy is to develop the marginal fields. The tax regime has been structured to encourage this.

**Side Note**

There is an increasing trend for the larger IOC’s operating in the Netherlands to divest their assets to smaller players. This changes the profile of the organisations working in the industry. These smaller organisations are screened and required to demonstrate adequate/acceptable levels of competence, capacity and capability.

**Geothermal**

Geothermal wells are all located onshore.

**CO₂ related activity**

There is currently one offshore project planned.
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

**All private sectors.**

The state has a direct final interest in all licenses. This is executed via a vehicle called EBN. The EBN:

- Acts as a co-financier/co-decider
- Is deemed to be a license holder (NB in the Netherlands, full legal responsibility for safe operation lies with the operator, there are no legal obligations on the licensees)

Sources of evidence:

---

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

a. Trend (and number) of fatalities over the last 10 years.


c. Number of injuries in the most recent year.

d. Number of people employed.

e. Please provide data sources (if available).

Response:

The following sources of data were provided:

1. See website for more info/publications (www.sodm.nl, publications tab, then annual reports)

2. A presentation (titled “Some statistics, NOGEPA Excom 04-04-12”) outlining latest industry statistics was also provided (as a hard copy).

Some data (in the form of graphs) were also discussed at the session.

- The chart on Occ. H&S indicated a plateau in the level of incidents in recent years. The data presented included LTI’s, fatal incidents and restricted works cases (a LTI that can deployed to other activities outside his primary role).

- The chart on No. of injuries showed the last fatality offshore was in 2002; onshore, in 2005.

Additional remarks

- Under the auspices of NSOAF, some work was done to identify leading/lagging KPI’s (as a follow up to one of the recommendations following BP Texas City). This work addressed both Occ. H&S as well as process safety.

- Gas leakages also understood to be a key KPI for process safety. Leakages are categories as Major (> 300kg/s) or Significant (1 to 300 kg/s). These are measured and reported as part of the annual reports/presentations (see data sources above). Small leakages are also seen as key as they can result in large flammable clouds. NB When comparing leakage data versus other countries, it is important to note that the Netherlands is a predominantly gas producing country and this will be significantly reflected in the data).

- NOGEPA has a working group that review the leakages and aims to identify the causal factors (e.g. Small bore fittings, commissioning activity and human factors).

Sources of evidence:
behind the leaks and develop learning opportunities. The group sits twice a year.

- A database was initiated within the IRF in 2003 to track accident data between countries (limited to offshore only). Only the data generated since 2009 is understood to be robust and allowing for any comparison. Care should be taken in undertaking any cross-country comparison as the data generating basis and reporting protocols might be inconsistent.

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

Incidents that have had an influence include Onshore blowout and sinking of a jack-up rig (in the 60’s/70’s) and Piper Alpha in the 80’s. A significant change in the legislation was implemented post Piper Alpha.

Global incidents also act as a trigger for review and sometimes change. Texas city is a good example (see above response).

More recently, the DWH has acted as an impetus for review of regulatory provisions. Companies’ were required to self-assess their operations versus the numerous learning that have resulted from the investigation into the causes of the incident.

In response to the recent incident in the North Sea (Total Elgin), operators have been requested to outline and demonstrate the adequacy of the provisions they have in place to manage HPHT wells (there are six in the Netherlands as ~ 4-5kpsi).

The industry trade group, NOGEPA also have a safety committee which reviews all accidents and shares the learning’s across the industry.

A major change to the legislation was implemented in 2003. The primary aim of which was to bring all H&S related legislation in all industries under the general H&S legislation (the arbo law). As such, all H&S provisions in the mining legislation was removed and brought under the arbo law. The provisions within the mining legislation now relate to technical or mining specific issues only.

Another aim of the change was to move to goal-setting legislation (i.e. make it more general) which is seen as offering a platform flexible enough to cope with on-going change without requiring new legislation. It is quicker to update/incorporate changes in best practice standards rather than the legislation.
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:

It is especially difficult to get good data on Occupational illnesses as causal factors are varied. Nevertheless, there are some on-going projects to better understand the impact of exposure to VOC’s (e.g. benzene, asbestos [during removal]). These projects are largely driven by REACH.

The TNO in conjunction with the Dutch Institute publish trends on Occ. Illness. This is used by the SSM to inform its strategy for mining activity.

On the whole, Occ. illnesses are not seen as a major problem in the industry, largely due to the use of PPE. However, organisations need to prove that this is not a problem to us (i.e. the regulator).

There is scope for improving the awareness of Occ. illness within the industry. REACH is helping to raise the profile but more can be done. Occ. illness KPI’s were missing from a recent survey on KPIs. Industry has been challenged to address this gap. Advocating for organisations to develop policies explicitly addressing Occ. illness.

Sources of evidence:

V.17.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

a. Directive 92/91/EEC and the framework directive are well written and concise. They both contain a significant amount of useful information.

The directive has had two major influences on the regulatory regime in the Netherlands; namely the requirement for a safety and health document and a SMS. The SMS and the Safety and health Document are similar to the safety case in the UK. In the Netherlands, the SMS is developed for the organisation/location and referenced within the safety case. A Safety case is developed for every installation.

b. The following activities (though not legislated for) go beyond the requirements of the directive:
   - Self-assessment in the aftermath of accidents.
   - Workforce involvement initiatives (theme days) for representatives of the worker unions (NB There are no safety reps as in the UK, but there are worker councils who have a H&S committee and a H&S representative).
   - All inspection reports go to senior management and are copied to the staff council.
   - Every quarter, a stakeholder (regulator, industry, worker unions) meeting is held between all parties to discuss matter of mutual and general interest (e.g. changes

Sources of evidence:
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:
Yes. The directive is implemented as part of the wider legislative framework.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
The legislation addresses both but the focus of attention is at the latitude/discretion of the regulator. As a general rule, more emphasis is placed on MAH.

Side Note
The enforcement strategy is risk based and focuses on barriers. It is informed by a strategy document (“Strategy and Programme 2007-2011”) that is developed every four years. The current version covers the 2007-2011 period. The next document covering the 2012-2016 will be issued in 2 – 3 weeks.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
The legislation uses both i.e. it is a hybrid; however it is predominantly goal-setting. The legislation still includes some prescriptive elements which relate to inspection and reporting requirements. For drilling operations:

- The BOP must be tested within the period specified in the legislation.
- Daily drilling reports must be submitted to the regulator (to ensure compliance with the drilling plan.).
- A drilling safety case is required. NB The drilling contractor must work to the client’s management system. The client always remains the operator.

For production operations:

- An annual report is submitted by the installation operator outlining the programme of activities for the year. A meeting is then held with the regulator to discuss the contents of the report.
- The safety case must be reviewed and submitted every five years. An update to the safety case is also required following major changes (e.g. installation of new kit). The updates must also include a demonstration that lessons in the Netherlands/globally have been taken on board/addressed (self-assessment.

Sources of evidence:
The safety case update must also demonstrate that key focus areas together with wider changes in the regulatory regime are adequately addressed. The aim is to demonstrate evidence of continuous improvement. For example, the following can be expected for a current safety case submission:

- The proposed new regulations (an assessment of the impact).
- Implementation of the safety and health document in the workforce.
- Barrier management.
- KPI’s.
- Approach taken to the five year review.
- Demonstration of how a safety culture is achieved or what measures are in place to ensure/improve the safety culture.

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response: 

The elements within the legislation (for example, training/competence requirements, workforce participation, and anonymous reporting mechanisms) independently help to develop/support a safety culture.

The regulator is currently running an initiative (over the next five years) in which the operators are required to demonstrate how they are achieving a good safety culture. NB this is an initiative that is not explicitly legislated for. In the Netherlands, initiatives (i.e. informal processes) play a key role in improving safety.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: 

No response.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: 

IADC template and NOGEPA guidelines. Templates for the self-assessment process and other initiatives are also issued. (These set a standard that the operators are tested against, although this can be viewed a prescriptive).

References to various standard’s/management systems as means of demonstrating compliance with legislative provisions are also made.

Interpretative guidance for the legislations is also issues.

Sources of evidence:
**V.17.5 Scope**

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. The legislation does not discriminate between the various sources of hazard but rather requires that all sources are considered.

b. As noted earlier, H&S elements are addressed within the framework H&S law; MAH are addressed within the mining law.

c. The concept of “critical activities” is used in the Netherlands. Critical activities must be identified in the safety and health document together with the mechanisms in place to manage them. The key aim is identify (via a risk assessment) what the critical activities and ensure that they are conducted at the same time e.g. major hot work and drilling. The ethos or guiding principle here is to minimise the potential for complex interaction as much as possible. For example, single operations are encouraged as opposed to COMOPS.

**Additional note**

In 2004, a requirement was place on operators to demonstrate a good prospect of survival for personnel overboard. This is assumed to be recovery in 20 minutes for unprotected individuals and 120 minutes for protected personnel.

NB The focus of the directive is on “means of rescue”. This should be changed to reflect a “good prospect of survival” (which is a more fundamental goal and addresses the means of rescue requirement).

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

The design and full lifecycle is covered. The national legislation covers the rig from when it is put in place to when it is removed.

- Lifting and transport are also covered but from the perspective of risks to other facilities. Permission is required from the regulator / coastguard before rigs are allowed to be put on station (to avoid interaction with elements on the sea bed e.g. pipelines, cables etc.) The actual transportation process is covered by maritime and other laws.

- Design / building / commissioning activity is also covered but not the actual construction work in the yard.

Seismic activity is regulated by a specific regulation (not under the mining law) which is administered by the SSM.
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:
*See response to Question 20.*

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:
*See responses to initial questions (under Scope section).*

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:
*See responses to initial questions (under Scope section)*

*The CCS directive has been implemented under the Mining Act.*

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:
*The workplace is defined as the facility and the area within the exclusion zone (NB this is the zone that is regulated under the mining law). What is the situation with pipeline laying vessels / interventions for pipelines that are outside the zone?*

*Travel to the workplace via helicopter is not considered as the workplace.*

*Diving is covered under the working environment act and not the mining law.*

*Can you please clarify and expand on the above?*

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:
*The operator is always the person in charge of the facility and for any interfaces that exist. Sub-contractors are responsible for their individual activities.*

Sources of evidence:
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:

Guidance is required on what a major change means in the context of Directive 92/91/EEC. The current approach is to look at the impact on the QRA i.e. risk profile. Additionally, the following would be seen as major changes:

- A change in the F&G system
- A removal of any system or module
- Organisational changes
- Changes in mode of operation
- A change from manned to unmanned

NB Any and all proposed changes to the installation will be outlined in the annual report.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:

The internal management system plays a key role in QA and QC activities. The legislation requires the use of a management system that is based on internationally accepted norms. The system should be reviewed every three years.

Typically, most risk assessments are done via an independent body, but the operator is required to demonstrate ownership.

Verification schemes similar to the one in the UK are not used here. There is a concern that such schemes would imply risk transfer from the operators.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:

Submitted documents are reviewed. Reviews are done using a thematic approach. Not approved but “no objections” or “no comments” are made. A letter is issued to this effect and it clearly highlights that the risk remains with the operator.

An independent audit of the management system of smaller organisations is sometimes required.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

Responders are professional individuals who take risks as part of their daily job. Responsibility for their safety will be under the discretion of the relevant authority.

Sources of evidence:
30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response: No response.

Sources of evidence:

V.17.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

- Review report and check the management systems.
- Carry out inspections.
- Continuous monitoring of drilling activity.
- Enforcement activity is risk-based.

Also see previous responses.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response: The enforcement approach is perceived to be successful.

Sources of evidence:

33. Who is legally responsible for the safety of regulators/enforcement officers while offshore or during transport to offshore installations?

Response: The operator.

Sources of evidence:

V.17.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

- The approach and legislation is seen to be effective
- If removed, safety will deteriorate over time
- If kept in pace, will improve things (recognises that key indicators have plateaued).
- The goal-setting approach helps to ensure continuous improvement. The initiatives also help.

Sources of evidence:
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response: See above response.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: The Dutch regime is at par with other North sea regimes.
The directive has helped to create a level playing field.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response: Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

V.17.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:

The following would help to improve the directive:

- Adopting a lifecycle approach for the management of the facility and the wells.
- Placing more emphasis on safety culture.
- Placing more emphasis on safe management.
- Placing more emphasis on safe drilling.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

V.17.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: 
Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

V.17.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: 
Have no reservations against the use of a regulation. There are pros and cons associated with the use of either. The legislative barriers that exist in the UK and Norway do not apply in the Netherlands (the legislative framework is more flexible). Furthermore, there are less interpretative documents here in the Netherlands; hence the burden of change will be lower than for the UK or Norway.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: 
Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:
45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:
Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:
Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

V.17.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:
Question not directly answered due to time constraints. However, the responses to the earlier questions provide some insight and are directly applicable.

Sources of evidence:

V.17.12 Attached Information

No further information.
V.18. NOTES FROM INTERVIEW WITH:

Industry
NOGEPA

from

Netherlands
V.18.1 Demographic Questions

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V.18.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response: N/A. Interview started from Question 6.

Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response: N/A. Interview started from Question 6.

Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response: N/A. Interview started from Question 6.

Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Interview started from Question 6.

Sources of evidence:
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Interview started from Question 6.

V.18.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response:
- Drilling activities include Oil and Gas, Salt mining and geothermal wells. Currently there are about 600 onshore production locations and 1900 wells onshore (most production locations and well sites are very small and can be described “as a well with a fence. There are ~ 154 offshore installations, most of which are unmanned/temporarily manned. Around 1450 offshore wells have been drilled. The trend is reducing the number of people offshore. The installations are organised to conform to a hub/spoke model utilising central control thus negating the need for spoke installations to be manned.
- Of the order of 10 to 15 wells are drilled offshore per year. In 2010, ~12 wells (10 explorations; 2 appraisals) were drilled (NOGEPA, 2010). In 2010, 30 wells (19 oil; 11 steam) were drilled onshore at Schoonebeck (NOGEPA, 2010 and 14 at other onshore locations). In 2011, 33 wells were drilled onshore.
- According to the NOGEPA annual report, in 2010, gas production from both on/offshore was of the order of 85 BCM³
  - The data shows that spills of an environmental nature are reducing
  - Offshore Oil production is going down. In the eastern part of the country oil production will rise thanks to the redevelopment of the Schoonebeck field.
  - Gas production onshore is dominated by the Groningen field, however smaller onshore fields make an important contribution too. Offshore produces around 20 BCM.
- The geothermal industry is growing. Drilling permits are relatively easy to get. Drilling such wells has resulted in traces of gas/oil being produced too which those involved and the facilities provided were not equipped to manage. The SSM is clamping down on this and it is expected that the same drilling provisions will apply irrespective of industry i.e. geothermal wells will be regulated in the same way as oil and gas wells.

Sources of evidence:

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7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:
See previous response.

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:
All private sectors. The licensee has no responsibility/obligation. This lies solely with the operator.
It was noted that the state (via a vehicle called EBN) has a 40% stake in all oil and gas discoveries. On top of this companies pay 50% state profit share. The participation of the state in the sector is perceived to have led to a stable fiscal and political regime that aids/fosters activity.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:
On the whole, perceives the Netherlands to have a good safety record, especially with regard to other industry sectors (Oil and Gas is far better than construction).
Advised we consult the Ministry of Social affairs for information on comparable data across industry sectors.
Provided two sources of statistical data related to H&S issues. First, the 2010 NOGEPA annual report (Pages 31-35 address safety issues) and a presentation developed by the regulator (the SSM).
Suggests we use the data cautiously as the data collection basis used differs from those in other countries. Hence, it is difficult to compare across.
Also suggested the IRF data on gas leaks to be a good source of data for this area.

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:
See introductory notes.
Global incidents necessarily lead to a review of the regulatory regime in Netherlands.

Sources of evidence:
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:

Figures for NAM are low. There were three cases last year, for stress related reasons. Noble had 1 or 2 with reduced hearing and a few back injuries. [The data is for direct employees only. Contractor data are not included].

It was remarked that in GDF SUEZ, back injuries are considered as accidents as opposed to an occupational illness.

Indicated that it is particularly difficult to indicate causality as different sources might be active e.g. workplace noise versus loud music.

Noise was identified as a particularly significant issue.

On the whole, Occ. H&S issues are mostly benign and revolve around stress, loss/reduction of hearing and back problems (due to manual handling). Projects have been commissioned to address/mitigate these as much as possible.

Sources of evidence:

V.18.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

a. The Dutch Regulatory regime (the MiningLegislation) existed prior to Directive 92/91/EEC. The regulations have been updated over time.

   • Onshore in 1964.
   • Offshore 1975 and in the early 90s following the introduction of the directive.

The transposition of Directive 92/91/EEC was based on a gap analysis versus the national legislation.

On a practical level, the operators engage with the Dutch legislation as opposed to the directive.

In 2003, the Dutch mining regulatory regime changed significantly. All provisions relating to H&S removed and incorporated into stand-alone H&S legislation (the so-called “Arbo” legislation). The mining legislation now focuses on license conditions, technical elements, etc.

The industry and to a lesser extent the unions provided input to this update; Industry input is coordinated via NOGEPA. NOGEPA addresses topics in committees and working groups in which representatives of the companies participate. Through this also the selective input of employees of the member companies is provided.

Every quarter, meetings are held between the four social partners: drilling contractors, operators, trade unions and the regulator. The meeting have been conducted for the last 15
The Dutch mining legislation incorporates the provisions of the working time directive for offshore workers — 2 wks. On 2 wks. Off.

There is also a requirement for a Risk Inventory Evaluation (RIE) report to be developed. This applies to all workplaces and for all industry sectors.

- The report should identify all the risks in the pertinent workplace together with the mechanisms in place to manage them.
- The primary focus is on Occ. H&S risks.
- The report has to be submitted to the authorities and accepted.

There is also a requirement for a Health and Safety document whose primary focus is on process safety and environmental hazards. It also addresses Occ. H&S safety but at a high level and primarily refers to the RE report. This has to be submitted and reviewed every 5 years or following a material/major change.

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: Wider legislative framework. Also see above response.

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: Covers both. See above response.

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response: Perceives it to be predominantly goal-setting. There is a requirement to demonstrate how safety has been achieved to the regulator.

Sees the goal setting approach as it making it necessary to go extra mile (i.e. beyond old prescriptive minimum requirements) thus increasing the overall level of safety.

The IADC SC template was developed to reduce the burden of moving drilling rigs between countries, particularly those in the North Sea. They are also part of a drive to improve consistent standards.

The cross-country burden does not apply to operating facilities that just have to comply with local regulations.

For drilling activity the standard practice is to use the IADC safety case and associated guidelines. These provide a comparison between the IADC Safety case and the regulations in each country thus identifying any additional gaps that need to be addressed. When used in the Netherlands for compliance purposes, the key focus of the regulators is on the areas that differ / require additional work. This is seen to be a pragmatic approach as it avoids duplication of effort, especially if the same requirements have been supplied elsewhere.

Furthermore, UK safety cases are accepted here provided any additional requirements have
been met. In terms of regulatory approvals, a letter stating “no further comments” is received from the authorities. This is the approach used for all industries and not just the Oil and Gas sector. No charges are levied by the regulator for the report review.

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:
What factors encourage a good safety culture?

- The Dutch labour (Arbo) law requires that the workers are involved in safety related issues. This is effected via a works council (for large number of employees) or via a representative (for small numbers). This forum is a mechanism via which safety related concerns can be raised.

- Cultural/behavioural programmes are driven and conducted by organisations (i.e. at the company level- operators and contractors) as opposed to being prescribed by regulation. Some differences exist in the programmes used, but they all achieve the same goal. For example GDF SUEZ has a Safety in the Backbone with o.a. the guardian angel programme whilst NAM (Shell) uses another system.

- A key advantage of this approach is that such programmes are tailor made to reflect the culture of the country. This is key.

- The SSM has an anonymous compliant line. Any issues raised are discussed at the quarterly meetings. Reports made this way are generally rare. Concerns have been expressed on the potential for earthquakes onshore.

There are differences in the SC approaches between the UK and the Netherlands…

In the UK, the safety case for each installation needs to include a description of the organisations management system that applies. In the Netherlands, the management system is developed on a company wide basis, It is not submitted for review but has to be available on request, for review and inspection/audits.

A safety case for any installation under the area covered by the management system will make reference to the management system. But will not include details of the management system.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: None.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

In 2003, guidance notes were repealed and selectively replaced by the NOGEP guidelines. These are available on the NOGEP website” NOGEP.nl” in the “download area”.

Following DWH, a number of new guidelines have been developed. The regulators are...
involved in the guidance development process. They do not explicitly approve the guidelines but accept them saying no further comments. The guidelines are taken to be the industry standard and represent good practice/minimum acceptable standards and are reviewed in a 3 yearly cycle and developments in best practices are incorporated. It is not mandatory for operators to adopt them, but most operators adopt them as their standard practice. Any departures must be demonstrated to be equally as good or better. The guidelines also include requirement for ALARP.

V.18.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. As noted previously, the RIE report addresses Occ, H&S issues. The Safety Case document covers process and facilities safety (i.e. Major Hazard issues). A separate document on emergency response provisions is also submitted to the regulator. This is based on a standard and outlines/define training requirement for personnel involved. Normally no comments are received on the formal issue; however observations are made during inspections.

b. Critical is understood to imply any situation outside normal operating envelope. The scenarios used in the emergency response document would be seen as critical. Some tasks are also defined as critical e.g. rig towing and wire line activities'. The definition of what tasks are critical is typically defined/driver by internal company standards. Some critical activities become routine as they are managed over time e.g. vessel approach on DP is taken a normal activity. Hence the definition of critical evolves.

NB. The words critical/normal are not explicitly used in the national legislation but in standard practice.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

For drilling rigs (i.e. floating facilities)…

When a drilling rig is floating, maritime legislation applies.

When a drilling rig within 500m of a fixed installation i.e. within the exclusion zone, the national legislation applies (to all vessels within the zone)

When jacked up on location, the national legislation (mining/labour law) applies.

For diving activity…

Diving activity within the 500m exclusion zone will be covered by the national legislation (This will include diving activity from SBV’s).

Diving activity outside the 500m exclusion zone are covered by maritime law.

The interfaces/interaction between the two legislations is monitored by the regulator (SSM).

It is also noted that some grey areas exist that will only be tested in the event of an incident.

Sources of evidence:
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:  
See response to Question 20.

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:  
The Dutch mining law also governs the following activities:  
- Geothermal drilling/wells  
- CCS  
- Gas Storage (HC or otherwise)  
- Shale gas drilling / Fracking  
- Salt mining

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:  
See response to Question 22.

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:  
In general, the legislation does not define a place of work per se, but rather places responsibility for the safety of the employee on the employer in all locations/activities the employee might work from/be involved in i.e. the workplace is simply taken to be where labour is being undertaken.  

On transportation…  
Helicopter travel will not be considered as the workplace for the pilot and not for general workers. However, the contractor has a duty of care/is obliged to ensure the safety of his/her workforce whilst in the helicopter.  
The above concept also applies to other modes of transport provided by the employer to the employer in the context of work.  

With regards to the facility…
The rig operator is ultimately responsible for the safety of all personnel on the rig – direct employees, contractors, visitors, inspectors etc. However, the direct employer also has a responsibility that the above is achieved i.e. that the rig is indeed a safe place for his/her workers to visit/work. Under the law, all employers have responsibility for their employees irrespective of the where they work. The operator is responsible for coordinating/ensuring the safety of all activities undertaken on the rig.

In practice, how the above works—in the context of drilling contractors—is that the operator will assure themselves (via an audit process) that the drilling contractor is competent. It is not clear whether this aspect is explicitly legislated for i.e. the competence assurance process. Nevertheless, it is regulated by the SSM, hence is covered.

After the restructuring of the Dutch legislation in 2003, greater emphasis (by NOGEPA/IADC) was placed on the development of a bridging document which explicitly outlines and clarifies the roles and responsibilities (primarily pertaining to safety issues) of the various parties involved i.e. who is responsible for what and why.

It was also stated that the scope of activities associated with a rig is not always governed by the mining legislation. This is demonstrated by a previous incident involving a vessel and a rig in which the mining regulator (the SSM) was not involved as it was understood not be a mining related event.

<table>
<thead>
<tr>
<th>25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?</th>
<th>Sources of evidence:</th>
</tr>
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<tbody>
<tr>
<td>Response:</td>
<td>The term duty-holder is not used in Dutch legislation. In the eyes of the law, the operator (being one of the co-owners/licensees) is taken as the representative of the co-owners/licensees and the responsible party for all employees under his/her control. Under the law, the licensee has no direct responsibility or oversight role (although in practice they discharge some oversight duties through technical and operating committees).</td>
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<tr>
<th>26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. What is the definition in the relevant legislation?</td>
<td>Reference was made to the provisions outlined in the Chapter 3 (Article 3.8.2, section C) of the labour regulations (Arbo law). Against this provision, a major change is understood to be: A departure from the original design intent of the installations. NB. Like-for-like changes do not fit this definition. This is heavily biased towards technical/material changes. Organisational changes are generally not understood to represent Major changes. For example, a decision to move a control room for an offshore platform onshore was reviewed and assessed as part of internal procedures, but not under the law. There is a general requirement to keep the safety case up to date, hence it was (or will be) updated to reflect this change but this change did not trigger a resubmission of the safety case (which would be required for any major change).</td>
</tr>
</tbody>
</table>
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or a subject to independent/peer review? If so, how is this achieved?

Response:

The management system is the primary means by which quality control of safety assessments etc. is achieved.

Prior to the 2003 restructuring exercise, there was a mandatory legislative requirement to implement an ISO 9001 based system (or equivalent). This provision has been rescinded and the law simply requires that an adequate management system is in place.

Within the context of the law, there are no explicit requirements for checks of the management system by external third parties. However, the larger sized organisations often adopt such approaches. Furthermore, a verification scheme similar to that used in the UK exists but is not legislated for. This is driven by internal company requirements and is more widely used offshore than onshore. The regulator has been known to draw on the verification reports to inform compliance activity.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and/or other independent party? If so, how is this achieved?

Response:

The safety case is submitted/reviewed by the regulator who does not “approve” the document but rather offers “no objections”. The response received is a “letter of no further questions”.

Audits/inspections conducted by the regulator will focus on confirming that the safety case is indeed reflected/mirrored in the platform. Inspection agenda of the regulator is established by a multi-annual plan which reviews incidents, statistics and operational experience.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

All employees will be covered under general labour law as opposed to mining legislation.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

On the whole, the legislation is not perceived as discriminatory in any regard. However some specific provisions apply that are required to ensure the safety of the individual and the workforce such as:

- Medical checks are required for offshore workers every two years. Prior to 2003, this was a blanket requirement for all workers in all activities. Currently, the requirement is targeted towards offshore workers. Such checks are not required onshore.
- Some jobs require specific medical checks. For example, an electrician cannot be colour blind.
- Diabetic individuals are not allowed offshore but tailor made arrangements are possible for a regular shift worker, developing diabetic, on an offshore installation.

Sources of evidence:
where a medic exists (on platforms with 25 people or more).
- Age is limited to 18 and 65.
- Pregnant women are not allowed offshore after a certain time.
- In general discrimination only occurs where safety is a concern.

V.18.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:
Enforcement practice/approach is the same for all industries/activities. SSM’s key goal is to improve safety and this is done primarily via notices. The approach follows two themes: penal and economic (fines etc.). The Netherlands adopts a three-tiered A, B, C approach. C is the lowest level which basically informs the party to do something about it, B includes a time frame of 3 months, A – issue has to be rectified within a week. Fines are sometimes issued for breaches. The fines are not fixed but rather reflect the severity of the breach. In general, fines are issued for actual incidents and notices following general inspections. Fines can be given following inspection activity.
Inspections activity occurs at three levels: the design stage, during operations and where incidents have occurred. In the later (i.e. where an incident has occurred), a public prosecutor will be invited to assess if prosecutions are required.
As noted earlier, inspection activity is risk based and based on a five year plan. It also depends significantly on the level of confidence/trust the regulator has in the organisation to manage its affairs.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:
On the whole, the regulatory approach is perceived to be successful. By requiring industry to demonstrate safety, the goal-setting approach has helped to raise standards across the board. It has also helped to open the dialogue process. Believes that with less people, less time, less bureaucratic elements (paperwork etc.); the same levels of safety are being achieved.
The following remarks were also made:
A competent regulator is also seen as a key element in the success of the regime and ensuring/preserving this is seen to be a key challenge. Retirement and the structural legislative changes in 2003 are understood to be key threats in this regard. Combining responsibility for enforcing Occ. H&S and MAH compliance in one body (the SSM) can present challenges in terms of the level of expertise required to address both. NB The SSM currently operates as a one stop shop for all mining locations (offshore and onshore) activity regarding to safety. This helps to reduce the inspection burden on the companies and provides a clear coordinated approach.
The proposed regulations also represent an additional burden to the regulator and the industry.
On the whole would like to see an approach similar to that used in the Netherlands in use across all Europe (i.e. EU wide harmonisation) but recognises that this might not be possible due to the need to reflect location specific issues within individual member states.

Sources of evidence:
Not in favour of a centralised EU led body for offshore safety.
Increasingly the workforce on a drilling rig is becoming international in the sense that many languages (English/Dutch/German/Polish to name a few) are spoken on the facilities. It is helpful to have inspectors that can speak the mother tongue of the individuals on the facilities as this is key to identifying any local issues. Advocates a limited cross-EU inspection regime as this helps to identify and share good practice and cultural factors.

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
Responsibility for safety lies with the operator of the facility. This includes whilst on site and during travel (by helicopter provided by the operator).
It is noted that the regulator has the capability to travel to the platforms via the use of special police helicopters. In this circumstance, responsibility during the travel will lie with the police.

V.18.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
The supplied statistics show positive improvements which are on-going.
The following remarks were also made:

- In general, large companies require “supervision” as opposed to the smaller ones which need “coaching” (i.e. from the regulators perspective). The SSM coaching role for smaller operators is seen as a key element of delivering safety/maintaining the current level of performance.

- A capability/competence dichotomy exists between the small and large organisations. Larger organisations tend to have more staff and hence a wider range of competencies in-house as opposed to smaller operators.

- Younger workers tend to work safer/are more safety focussed because of training. They have limited/no knowledge of previous unsafe practices and hence are less prone to adopt bad practices. The reverse is the case with older workers who are more prone to adopt poorer work practices. However, the older workers have more direct experience of incidents and thus tend to more aware. In reality, a mix of workers covering both old and young is beneficial.

- The OIM is also seen as a central pillar to ensuring safety on a facility. This has been recognised by both workers and the industry and various initiatives have and are being taken to support the OIM in delivering safety.

- OIM days are organised where OIM’s are brought together to discuss/ review issues of interest to all including (but not limited to) sharing incident knowledge and how they can be prevented in the future, sharing best practice/working observations etc.

- NOGEP A has also introduced the Management of Major Emergencies training programme which already exists in the UK.

Sources of evidence:
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
See previous responses in Question 32.
The Dutch mentality is to be “best-in-class” (with regards to safety).
Understands it to be the best system that fits with the country’s culture, environment and legal environment. Does not see the model as working in other countries.
In the context of the above, considers the directive approach to be the preferred legal instrument from the EU that helps to maintain this.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
Due to existence of national legislation addressing the elements of the directive prior to its implementation, it (i.e. the directive) is perceived to be more of an administrative tool. In the event that no national legislation existed, it would be very useful.
Recommends that the directive be updated to explicitly address process safety issues (i.e. MAH).
In new countries, it would be difficult to start with Directive 92/91/EEC. Reputable IOC’s would be required to ensure its provisions are complied with; smaller outfits would struggle. The competences within the regulatory apparatus would also be a key issue.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

a. The following remarks were made:
   - Smaller organisations need more oversight/support from the regulator.
   - There are concerns on the level of competence amongst the workforce on both

Sources of evidence:
sides (regulator and industry).

- Ageing workforce is also an issue. There are initiatives currently being undertaken to address this issue (say via knowledge transfer schemes) on an organisation by organisation basis as opposed to industry wide initiatives.

- The government is considering amalgamating all the regulatory authorities into a single organisation. This has raised concerns as to the potential for inspections from non-industry specialists. Not in favour of this approach and would like to keep an independent inspectorate for drilling and production activity as the industry has some very unique and specific issues (or hazards) (as is currently the case).

- Some concern rose on ageing installations (>40 years alone).
  - There is some uncertainty in this area.
  - Systems are available to inspect/determine integrity level.

- Rules on ageing installations must remain effective and pragmatic.

b. The following remarks were made:

- The goal setting approach drives for higher standards/continuous improvement. The regulator plays a key role in the goal setting regime.

- The regulator currently recognises approvals obtained in other North Sea countries (e.g. UK) and stimulates/challenges industry to implement best practices.

V.18.8 Evaluation

38. Are changes needed in the relevant legislation in your country?

a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?

b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?

d. Otherwise, what changes are needed?

Response:

a. The regulations are seen as robust and adequate.

b. As above. Following DWH, some changes were made but these were of a practical nature (i.e. soft regulation in the form of updated standards/best practices etc.) and not directly related to the legislative provisions. The key learning following DWH that have been addressed are:

- Best practice drilling approaches.
- Competency of personnel in emergency situations.
- Improvement of emergency preparedness for all involved parties.
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

**Response:**

**The following changes are proposed:**

- The directive should be updated to reflect current best practice, particularly from the last few years.
- The directive should also be updated to address platform integrity.
- As noted previously, the directive should be further developed to explicitly account for process safety/MAH elements. It is currently perceived as focussing more on Occ. H&S as opposed to MAH.
- Would like to have a single directive governing all industry related activity in the areas of safety, health and the environment as the objectives of each overlap significantly OR the improvement in the clarity between the interfaces that exist.
- Would like to see an improvement in the how countries’ learn from one another (e.g. the NSOAF initiative) especially on incidents. This should be developed as an EU wide initiative. This is an informal initiative that works because it identifies and focuses on what is needed. Would not like to see it formalised as it might reduce its efficacy. NB The culture in the Netherlands favours and promotes pragmatism and open discussion amongst all the stakeholders; hence there is no explicit need for formal systems. For example, the unions do not require formalised roles to drive change. They achieve this via dialogue.

**With regards to standardisations of approaches across the EU...**

- Would like the EC to play a role in developing cross-European standards to make operational practices more common/unified. Recognises that this is a difficult task as
- The lead time for developing standards is too long (of the order of 5 to 10 years). Even then, they are still full of compromises. Would welcome any initiative that helps to speed this process up.
- Local agenda can be a barrier. E.g. the desire to have country specific standards.
- On the whole, any initiatives that support/help ensure harmonisation in operational practice would be welcome. Furthermore, immature countries need guidance documents they can work to. The IADC templates are a good example.

**Operational practices should be a standard which one can adopt but also allow the freedom to do equivalent or better.**

**Sources of evidence:**

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>The effect would be as follows...</strong></td>
<td></td>
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<tr>
<td>- Harmonisation in operational practices and a resultant increase in efficiency across borders.</td>
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<tr>
<td>- Would be beneficial to new players.</td>
<td></td>
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<tr>
<td>- Ease of movement of drilling rigs.</td>
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<tr>
<td>- Help supporting the creation/development/fostering of a culture of continuous improvement in the EU. Achieving this would increase the level of proactivity and incidents will cease to become the key driver for change.</td>
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</table>

| With regards to input to the process on the new regulations... | |
| - Considers the proposed regulations to be detrimental to safety. | |
| - Not in favour of the current situation in which countries with limited or no oil and gas activity have significant input to how it is regulated. | |

**V.18.9 Administrative burden**

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?

   a. Please outline the administrative burden implementing the directive in your country.

   b. What (if any) objective measures are available to evaluate the burden?

   c. Are any changes needed to minimise it?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>The following remarks were made:</strong></td>
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<tr>
<td>- Perceives the administrative burden in the Netherlands as lower than other North Sea countries due to the benign nature of the relatively shallow waters.</td>
<td></td>
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<tr>
<td>- Considers the directive (opposed a regulation) as not imposing an additional burden as the provisions contained therein are already contained in the national legislation.</td>
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<tr>
<td>- Considers the burden as not a burden per se, but rather a central element to maintaining safety/ensuring safe operation. Regards the burden as familiar due to long legacy/history. Recognises that this might not be the case with new countries.</td>
<td></td>
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<tr>
<td>- The burden is seen to be limited, manageable and more importantly providing value.</td>
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</tr>
<tr>
<td>- Any future attempts at prescription will also serve to increase the burden.</td>
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</tbody>
</table>

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?

   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.

   b. How can the burden be minimised?

   c. Can existing systems cope with the extra requirements?
V.18.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry-specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: See earlier responses.

The new regulation will create huge differences between offshore and onshore. Offshore it will lead to longer lead times in terms of drilling from 17wks to 26wks. Which does not translate into additional safety but rather just added bureaucracy?

Sees new countries’ as preferring the regulation approach, largely because of weaknesses in the local regime. The EU needs to support more potent implementation of directives.

A directive allows for easy integration with the existing national framework.

44. In your opinion is the directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: Yes.

How can the directive or its implementation be improved…

- Involve the industry.
- Leverage on industry initiatives such as OGP and the IADC.
- Making explicit reference to certain standards in the directive.
45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:
See it as equally useful in all environments. Suggests the use of special addendums or guidelines to address any special issues. As an example, different rig specifications apply for different locations.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:
See previous responses.

Sources of evidence:

V.18.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:
N/A.

Sources of evidence:

V.18.12 Attached Information

No further information
V.19. NOTES FROM INTERVIEW WITH:

Union
Nautilus International and FNV Bondgenoten

from

Netherlands
V.19.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Nautilus International / FNV Bondgenoten</th>
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<tr>
<td>Stakeholder type:</td>
<td>Union</td>
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<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Netherlands</td>
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</table>

V.19.2 Initial questions

1. **What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?**
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   **Response:** N/A. Session started at Question 6.

2. **How effective is the relevant legislation in your country?**
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   **Response:** N/A. Session started at Question 6.

3. **What changes (if any) do you think are required following the Deepwater Horizon accident?**
   a. To national legislation.
   b. To Directive 92/91/EEC.

   **Response:** N/A. Session started at Question 6.

4. **What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?**

   **Response:** N/A. Session started at Question 6.
5. What other options (e.g., guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

Sources of evidence:

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V.19.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: Best source of information will be NOGEPA/SODM.

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?

   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: Best source of information will be NOGEPA/SODM.

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: Best source of information will be NOGEPA/SODM.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response: Meetings are held every quarter between all the social partners – employers, operators and the regulator. The meetings are constructive, open and friendly. At these meetings, incidents in the industry (both minor and major) are discussed so as to share learning’s and develop understanding as to how they can be prevented. Information

Sources of evidence:

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MANAGING RISK

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

The Piper Alpha disaster has been a key influence.

Other global incidents such as DWH, Texas City etc. also trigger a review of the adequacy of regulatory provisions in the Netherlands.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

Response:

All hazard types (i.e. occupational illness, Occupational accidents and Major Accident Hazards) are treated as one.

There is very limited data on occupational illness in the industry.

Asbestos (mostly on new ships built in China) and Noise have been highlighted to be key areas of concern in the shipping industry.

Sources of evidence:

V.19.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach been “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?
Response:

*More familiar with the national legislation than the directive or its transposition/interpretation.*

*Not aware of any gaps that exist in the national legislation.*

*There are special regulations that govern the working time of offshore workers as well as diving activity.*

*Industry guidelines provided and developed by NOGEPA are understood to go further than legal requirements. For example industry health standards do not allow diabetics to work in offshore locations that do not have doctors.*

*The industry also plays a key role in creating best practice. For example, Shell started using personal B.A. for personnel on its facilities; other operators soon followed their lead.*

<table>
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<tr>
<th>13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&amp;S legislation) or has it been enacted as a stand-alone piece of legislation?</th>
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<tbody>
<tr>
<td><strong>Response:</strong> No response.</td>
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<tr>
<th>14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?</th>
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<tr>
<td><strong>Response:</strong> All hazard types are understood to be covered.</td>
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<tr>
<th>15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.</th>
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<tr>
<td><strong>Response:</strong> Historically, the legislation has been prescriptive but is now moving to a goal-setting approach (about 8-10 yrs. ago). Some issues arose as to how the goals would be achieved. These have been addressed by discussions and agreements between employees and employers. The agreements are documented in a document known as the” ARBO catalogue”. This is not used across the board but exist for certain sectors (e.g. diving). It is not compulsory to have one and where there is none, the ARBO law which combines both goal setting and prescriptive elements applies.</td>
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<tr>
<th>16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?</th>
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<tr>
<td><strong>Response:</strong> On the whole initiatives relating to safety culture / behaviour stem from the industry as opposed to being explicitly legislated for. Large organisations like GDF SUEZ and NAM play a key role in developing good safety cultures in the industry. This is evident in the scope of the activities they undertake such as safety drills, safety audits, emphasis on the use of hand-rails, emergency preparedness etc.</td>
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</table>
This helps to set an example that others can follow. However such activities tend to be limited to the larger organisation only; the smaller outfits do not tend to have the same focus.

Anonymous reporting provisions also exist (more informal than formal). The regulator will take calls from the workforce relating to any issue on their/working conditions.

The “Polder model” that is the bed rock of social dialogue in the Netherlands also plays a key role. Issues are raised and addressed (immediately) informally between the stakeholders and all the social partners. The process is very open and transparent and there are direct lines of communication between all partners. This is the natural process in the Netherlands. As such a formal safety rep system as used in other countries is not used here.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: No response.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: Industry guidelines produced by NOGEPA and the various ARBO catalogues.

Sources of evidence:

V.19.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response: The national legislation requires the employer to provide a safe working environment. In this regard, the expectation is that all hazards will be addressed –special or otherwise (this includes major accident hazards and all situations i.e. normal or critical).

Sources of evidence:
20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

<table>
<thead>
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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Drilling activity is governed by both the IMO and Dutch legislation. When the rig is in transit, IMO regulations apply. When it is drilling, national legislations apply. It is not clear how the interfaces/boundaries are addressed or where they are.</td>
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21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>The national legislation is understood to cover all activities and stages associated with the production process (i.e. the entire lifecycle).</td>
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</table>

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>All mining/drilling related activity falls under the mining law. As such, activities like Shale gas drilling, shale oil production, Carbon capture and storage and geothermal are covered.</td>
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</table>

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>See response to Question 22.</td>
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24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”? Does it cover divers in diving operations?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>For offshore workers, the workplace is understood to start from the airport/dock from which they board the helicopter or boat to get to the platform. However, this is not clear cut and there is some ambiguity as to whether they should be considered as passengers or employees when aboard the transit vehicle. Additionally, aviation law also governs helicopter travel and maritime law governs travel by ship. It is noted that to reduce the number of flights and hence flight risk due to helicopter travel, the working pattern of offshore workers was changed from 1 week on/1 week off to 2 weeks on/2 weeks off.</td>
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25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>For an operating platform, the employer is the operator of the platform. The OIM is responsible for everyone on the facility.</td>
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</table>
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response: Not aware of what constitutes a major change or how it is defined.

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response: The works council is engaged with on the H&S document (similar to the safety case). A works council is made up of a group of employees within an organisation.

- The law requires a works council for all organisations with more than 50 staff.
- Members the work council are chosen by the workforce.
- By law, the works council must be engaged with on various issues in the workplace including safety and working time.
- The works council are obliged to ask for safety reports etc.
- Also, how the organisation is managing its risks has to be discussed with the works council (i.e. how they identify and manage the risks).
- The works council have the authority to stop an activity deemed to be unsafe / harmful to the workforce.

Members of the worker unions can also be members of the works council. Hence issues are usually addressed via both forums.

There is pan-industry works council meeting organised under NOGEPA that sits around six times a year. Here, works council representatives from various organisations meet to discuss matters of mutual interest.

NB. It is suggested that members of the works council are engaged with to provide response to this questionnaire, especially on the safety related issues and this question. Henk has suggested he will facilitate this by sending them the questionnaire and/or arranging a further meeting with them.

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response: N/A. Question for the Industry/ regulator.
29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

Workers involved in rescue and recovery operations are understood to be covered by the Dutch and other legislation. For e.g. the crew and driver of a rescue boat will fall under IMO law.

It is not clear as to whether it is the mining legislation (and thus Directive 92/91/EEC by implication) that applies.

Sources of evidence:

30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

Not aware of any real issues in this area.

Some provisions exist for women under the general ARBO law, but nothing specific to the mining legislation is known to apply. The number of women working offshore has increased over the years and is still increasing.

Sources of evidence:

V.19.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

A single law applies for both on/offshore mining activity and there is no difference in the inspection regime that applies in both areas. However the regulatory bodies are different. Onshore activity is regulated by the Labour inspectorate (the ministry of social affairs and labour) whilst offshore activity is regulated by the State supervision of Mines (Staatstoezicht op de Mijnen, abbreviated SodM). There is also a maritime authority that regulates all maritime activity.

A risk-based approach is used to identify key themes that will be the focus of inspection activity e.g. working at height. Inspections then look at these activities and how the risks associated with them are managed. Suggestions as to how to make improvements (where necessary) are provided. Follow up inspections are conducted to ensure findings/recommendations are complied with.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

The approach is a good way to pick up issues especially with the follow up element. The risk-based approach ensures as much as possible that regulatory activity is focussed on organisations with poor safety performance. Members of the workforce and the unions also have the opportunity to raise issues with the regulator (and they do).

Lack of funding can be an issue and this has an impact on the number of inspectors available together with the level of inspection activity. This is more of an issue onshore than offshore.

Sources of evidence:
33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
*In the first instance, the direct employer has prime responsibility.*

Sources of evidence:

**V.19.7 Effectiveness**

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
- *It helps to maintain a high level of safety.*
- *It helps to increase the level of awareness/safety consciousness amongst the employees and employers.*
- *The regime is dynamic and constantly improving; hence safety standards will remain high.*

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
*The regime ensures a similar standard of health and safety as can be seen in other North Sea countries and one that is much better than countries with less mature Oil and Gas industry.*

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?

b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
*No response.*

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:

a. Any notable difficulties in the practical application?

b. Any unexpected positive effects?

c. Any unintended (or unexpected) negative effects?
d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?

e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

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<td>No response.</td>
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**V.19.8   Evaluation**

38. Are changes needed in the relevant legislation in your country?

a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?

b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?

d. Otherwise, what changes are needed?

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<th>Response:</th>
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<tr>
<td>No response.</td>
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</table>

39. Are changes needed in Directive 92/91/EEC?

a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?

b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the directive specify adequate minimum safety and health requirements?

d. Is it consistently interpreted among the Member States?

e. Is the directive free of other significant gaps?

f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?

g. Otherwise, what changes are needed?

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<th>Response:</th>
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<tbody>
<tr>
<td>No response.</td>
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</table>

40. What would be the cumulative effect of the changes you have proposed to the directive?

a. What would be the cumulative effect of the changes?

b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

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<tr>
<td>No response.</td>
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**V.19.9   Administrative burden**
41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
The current system achieves the right balance between cost/safety especially as the trends are going down.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
No response.

Sources of evidence:
V.19.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

The key goal in this regard should be safety and maintaining the safety of Dutch citizens who work overseas is also very important. A level playing field is the best way of achieving this and by implication, centralised rule making either in the form of a directive or a regulation. However, a key element is the ability for each country to address local specific issues that do not apply to all locations.

It is difficult to say if a regulation or directive is better and the preference will naturally lie in the tool that offers the most value with minimal disruption. The issue with the regulation approach is the potential negative impact it can have on the existing structures in North Sea countries (i.e. disruptive/detrimental to safety). On the other hand, it is important to recognise that no such structures exist in immature countries and this is an issue that needs to be addressed.

On the whole, any regulatory action has a cost and the best approach will be that which achieves a balance between cost and efficacy.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

No response.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

No response.

Sources of evidence:
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   
a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   
b. What options are used in your country?

Response: 
No response.

Sources of evidence:

V.19.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response: 
No response.

Sources of evidence:

V.19.12 Attached Information

No further information.
V.20. NOTES FROM INTERVIEW WITH:

NGO
Stichting De Noordze

from

Netherlands
V.20.1 Demographic Questions

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<thead>
<tr>
<th>Organisation:</th>
<th>Stichting De Noordze</th>
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<tbody>
<tr>
<td>Stakeholder type:</td>
<td>NGO</td>
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<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Netherlands</td>
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V.20.2 Initial questions

The scope of the study is quite extensive and, as such, a significant number of questions have been developed to ensure that each of the defined themes is explored as robustly as possible.

The initial set of questions in this section (five in all) cover broad overarching themes associated with this study which are developed further in the sections that follow. They are included here to ensure that responses to key themes are elicited first (and as a minimum) should there not be sufficient time to allow for responses to all the questions to be provided. Where there is ample time to address the entire question set, it might appear that there is some repetition between questions. This is recognised and represents a core element of the study design.

At the end of the semi-structured interview question set, you will also have the opportunity to express your views on the objectives of this study and (potentially) any issues not addressed in the semi-structured interview question set (or perhaps a related issue). These will be most welcome.

Interview Responses

The question set was used as a general framework guidance document to inform the scope of the interview. The questions were not answered as outlined but rather an open ended approach was adopted.

The following summarises the notes taken from the session and is provided as a summary of the interview.

Introductory remarks/comments

The session started with an open discussion and the following remarks were made:

- Stichting De Noordze is more environmental focussed than safety.
- On the whole, there have been no major issues that have been significant enough to get the NGO’s exercised; hence they might not have the relevant expertise on safety related matters.

Actual Interview Session:

On decommissioning activity

In recent times, decommission of platforms has been a key focus area. There is large amount of biodiversity around the platforms and there is a desire to keep them in place after the end of their useful life. The countries around the North Sea have approached the issue from different positions and thus have disparate policies of how the matter should be managed. This is perceived to be problematic and would like a single policy/common protocol to be developed and agreed by all North Sea countries.

Ship Collisions as a key concern in the North Sea…

Also remarked that the level of activity in the North Sea is quite high and constantly on the rise (especially with shipping/oil and gas related activity). The rise in activity can result in an increased potential for ship collisions (“ship to
ship” and “ship to platform”, (particularly from drifting vessels e.g. following loss of power). Perceives the problem to stem from the ships as the platforms are fixed (i.e. not mobile) and cannot give way. Human error and poor fuel quality are typically the usual suspects in terms of causal factors. Shipping activity is governed by maritime law; hence any issues should be addressed from that perspective. However, the interfaces that exist with the platforms also need to be recognised and looked at.

On CCS…

The following objections were raised with regards to the adoption of CCS in the North Sea:

- CCS technology on the whole is detrimental to the effort to move away from dependence on fossil fuels and thus stymies the progress/development of other sustainable energy sources.
- The North Sea as a dumping ground. Opposed to the principle that if you can’t undertake an activity onshore then you just move it offshore.
- The CCS process is energy intensive in itself (energy is required to capture and store CO₂).

On Gas storage…

- No objections as long as the associated risks are managed.

On Shale Gas…

- Not in favour mostly due to the damage it might cause to areas of outstanding natural beauty (drawing on experience from British Columbia, Canada). The location of shale gas activity is a key driver for its acceptability.

On Geothermal wells…

- No major concerns

On risks to personnel involved rescue and recovery operations (Question 29)…

- There is some concern as to the adequacy of rescue and recovery provisions.
- Highlighted the experience of the Prestige tanker that sank near the MW coast of Spain (~ 10 years ago) as a good example of poor and inadequate emergency preparedness. Most of the recovery work was done by local fishermen in small boats as the government lacked adequate resources. Such deficiencies need to be addressed/looked at properly.

The Spanish situation can be contrasted with other North Sea countries (e.g. the UK, Netherlands etc.) that have various organisations that can provide emergency services (RNLI, the Navy etc.) and discharge their duties very professionally.

There has been a recent debate in the UK to decommission the available Emergency Towing Vehicles ETV’s. It is hardly used, hence difficult to justify the need. Nevertheless, such provisions are important.

Legal responsibility for workers involved in rescue operations associated with oil and gas activity should fall under Oil and Gas Regulations as opposed to Maritime Law.

On Enforcement…

The hierarchy of control that should be applied should be mirrored on the following:

- Personnel need to be adequately trained and qualified to design and operate offshore facilities. Full understanding of the hazards and their consequences amongst the personnel is also required.
- It is important to have in place a verification approach/scheme that draws on the expertise of specialists/experts to ensure equipment are designed and maintained adequately. A good example is class societies who verify ship related activity.
- At the top level should be a regulator (or similar body) that checks that the verifiers do a proper job.

On Effectiveness…

- From personal knowledge, not aware of any issues in the Dutch Offshore industry. On the whole, considers the industry to safe, but is aware that not all incidents might be reported. For example, near misses involving ships might only be discussed in specialist journals.
• One issue that came to light in recent times was that the lights used on offshore platforms were observed to have a detrimental impact on the migration patterns of birds. Some work was done (by NAM and Phillips) to remedy this. The proposed solution was to change the colour of the lights used (from White to Green). This was temporarily implemented and helped to alleviate the impact. However, the solution could not be fully adopted as it created a conflict with helicopter travel (lights on the landing pad) and thus presented a risk to the workforce. This issue was essentially a conflict between environmental and safety considerations and first priority is always given to safety of the individuals.

• Major incidents in the past such as Piper Alpha and Alexander Kjeilland have led to stronger safety regimes/regulatory oversight. High profile events such as Shell’s Brent Spar platform has raised public awareness on offshore issues and thus acts as a further incentive to ensure that all risks are managed properly.

• However, it is felt that the risks will increase over the next decade. The reasons for this view include: ageing platforms; a reduction in investment as assets reach the end of their useful life; knowledge retention issues in the government (due to cuts).

On Evaluation…

• There are a lot more near misses than accidents. More emphasis needs to be placed on these – they should be monitored and regulated more strongly. There should be a clear message that irresponsible behaviour will not be tolerated (in the same way a speeding driver gets fined).

• The absence of incidents can result in a growing complacency in the industry. More work needs to be done to maintain high levels of awareness.

On the need for Social dialogue/Culture…

• This would work in Northern Europe but perhaps not as well in Southern Europe. For example, Malta and Cyprus are among the cheap flag states i.e. flags of convenience. These geographies are thus seen as high risk environments. Companies (who operate the ships) have a significant role to play in improving standards across Europe.

Suggestions for improvement…

• An effective regulatory regime needs good regulations that must be enforced properly. Thus high levels training/awareness is required for both the workers individuals and the regulator. This is especially important for the new/immature countries.

AOB/Final Comments…

• A key concern is that decommissioning activity will increase significantly over the next decade. It is paramount that this is done right and safety remains high on the agenda.

• Furthermore, an increased focus on safety is required in the final years of an asset. This particularly important as the assets get sold to smaller players who might be operating a marginal operation and thus place less emphasis on safety.

V.20.3 Attached Information

No further information.
V.21. NOTES FROM INTERVIEW WITH:

Regulator
Petroleum Safety Authority

from

Norway
V.21.1 Demographic Questions

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<thead>
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<th>Organisation:</th>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Norway</td>
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V.21.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO\textsubscript{2} injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: N/A. Session started at Question 6.
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

Sources of evidence:

V.21.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response:

Some data is presented in the FACTS 2012 publications.


Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

a) All wells are drilled offshore.
b) All production takes place offshore. Onshore, there are 8 land facilities for production and/or utilisation of petroleum.

The regulatory regime applies to “petroleum activities” offshore and onshore.

The regime applies to subsea petroleum deposits on the Norwegian continental shelf together with any related activity (e.g. planning, management, supervision etc.) that takes place offshore and onshore.

The regime also applies to “petroleum activities” at onshore facilities, and covers the actual onshore facility for production and/or utilisation of petroleum and systems, installations and activities integrated with the onshore facility or that have a natural connection to it. Currently, these facilities are limited to processing facilities (production/utilisation of petroleum product, e.g. refineries and gas treatment/metering).

Petroleum activities (Framework Regulations, Section 6, litera g) are defined as follows: “All activities associated with subsea petroleum deposits, including exploration, exploration drilling, production, transportation, utilisation and decom-missioning, including planning of such activities, but not including, however, transport of petroleum in bulk by ship.”

It is recognised that all drilling and exploration activity occurs offshore. No extraction or drilling occurs onshore. Hence the current lack of onshore coverage is not seen as a source of concern.

Sources of evidence:

The Petroleum Act
The Working Environment Act
(The Framework Regulations, Section 2, Scope of Application – “The Petroleum Act applies to petroleum activities related to subsea petroleum deposits on the Norwegian continental shelf...”; “The Petroleum Act also applies to petroleum activities at onshore facilities, and covers the actual onshore facility for production and/or utilisation of petroleum and systems, installations and activities integrated with the onshore facility or that have a natural connection to it.”)

The Decree of the Crown Prince Regent
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

All private sector involvement, with no public sector involvement.

The crown/state is understood to be majority stakeholder in Statoil (67% equity), a key player in the Norwegian Oil and Gas industry. Notwithstanding this, Statoil is still seen as a private sector player (operates the same way as other private sector players). Statoil is listed on both the Oslo and New York stock exchanges.

Highlighted the role of “Petoro”, a state outfit created to “maximise the economic values of the state’s oil and gas portfolio on the basis of good business principles”. It handles the states direct financial interest on behalf of the Norwegian government.

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9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

a. Trend (and number) of fatalities over the last 10 years.


c. Number of injuries in the most recent year.

d. Number of people employed.

e. Please provide data sources (if available).

Response:

Various reports available that will be supplied. A key one is the risk levels in the NCS “RNNP” report which includes official statistics/trends covering both Occ. H&S (“working environment” is the right Norwegian term) and MAH issues. The 2011 report will be issued next week – 25/04/12 (will be published on the PSA/PTIL website).

Personal injuries:

Serious personal injuries have shown a favourable trend in recent years, reaching 0.6 per million hours worked for the whole NCS in 2011 – significantly below the average for the preceding 10 years.

The personal injury frequency on production installations was at its lowest-ever level in 2011. Even with more hours worked overall, serious injuries fell from 23 in 2010 to 17.

On mobile units, the personal injury frequency increased slightly from 2010 but was nevertheless below the average for the preceding decade. Nine such injuries were recorded in 2011, compared with five the year before.

No fatal accidents occurred on the NCS during 2011.

Norwegian legislation (the Working Environment Act and regulations pursuant to the act) includes requirement for employers to report all workplace injuries/incidents to the regulator. Data has been collected for some time. The supplied data forms the basis of the RNNP report and is updated yearly. The reported data is used to inform priorities/focus areas for regulatory activity – both in terms of development and enforcement. Current/Priority areas reflect the trends identified in the RNNP report. For examples, noise issues/chemical hazards have been highlighted in the past and have subsequently become focus areas.

As a summary, it shows a downward trend. Not as an absolute trend, but generally shows some improvement, especially in key areas such as HC leaks and well control incidents.

Sources of evidence:


However, there was a higher incidence of events involving damage to risers, pipelines and structures in 2011.

The statistics on personal injuries in production installations also shows a downward trend. However, the converse was observed on drilling rigs with a slight increase in the frequency of personal injuries. Despite the increase, the frequency was still below the average for the last decade.

No fatal incidents occurred in 2011.

“Risk-based” is the guiding principle behind the Norwegian regulations and the development of the RNNP report to develop awareness of trends fits in with this.

Two key acts exist in Norwegian regulations. 1) The Petroleum Act which governs resources and HSE Management and is enforced by PSA/PTIL and 2) The Working Environment Act which governs the working environment and safety (Occ. H&S). This is enforced by the PSA/PTIL. The NPD has not any enforcement remit within the HSE area, only resource management.

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

1) Alexander L. Kielland Semi-Sub, 1980 (123 fatalities); Ekofisk Bravo Platform, 1977 (Blowout, no fatalities).

These incidents together with feedback derived as part of continuous monitoring initiatives led to the reform of the existing regulatory framework and ultimately a new legal framework came into force in 1985. A key element of the reform was to clarify the roles of the various parties involved, thus establishing clear lines of responsibility between the various regulators and between them and the industry.

In addition a new Supervisory Approach was initiated focusing on the implications of a risk based Regulatory regime. On the regulatory side, this (i.e. the reform) was also directed at the number of regulatory bodies involved in ensuring compliance with regulatory provisions (there were seen to be too many bodies involved). The PSA was tasked with an overall coordinating role of all regulatory bodies within the HSE area.

The 1985 reforms also gave rise to the consent system which is also key. They outline clear requirements/milestones when the operator is required to get consent from the regulator.

On the business enterprise side (i.e. the regulated parties), this focussed on defining the roles and responsibilities of the various parties. This made clear the overall duty of the licensee and the operators – locally known as the “see-to-it” duty. Basically, all parties involved must ensure that they fulfil and comply with the regulations of the day. In addition to this, the operator must also ensure (i.e. “see-to-it”) that any one working for him must fulfil the rules and regulations. The Licensee must see to it that the operator fulfils his obligations. The licensee is also mainly responsible for facilitating the operator’s executions of his tasks.

The “see-to-it” duty is an important element of the Norwegian regulations and it is not possible for any party to derogate his/her responsibilities. All parties (licensee/operators) are wholly and utterly responsible at all times.

In the DWH event, the operator and the licensees will have ultimately responsibility under the “see-to-it” duty. In addition the hierarchy of responsibility ensures that all the players involved are responsible parties.

The regulatory regime reflects what is known as the “internal control principle/regulations”, which clarify the role and responsibilities of the players of the industry in order to plan and carry all operations in a prudent manner. In 1978 we...
prepared guidelines on internal control followed by updated guidelines in 1981, and in 1985 the regulations concerning the licensee's internal control in the petroleum activities were laid down.

This development of the internal control was due to a necessary clarification of who was responsible for carrying out prudent operations. The industry itself is the responsible party, not the regulator. This principle became thus part of the safety regulations of 1985 and was carried further in 1997, in the new regulations relating to management systems and later in the framework regulations of 2001 and the supplementary regulations cf. to days framework regulations section 7 of the regulations relating to management.

In addition there has been a parallel development of rules and regulations relating to risk analysis.

The role of the regulator versus the operator/licensee was also clarified and the operator/licensee clearly identified as being responsible for any incidents. This was as mentioned above further clarified in the 2001 reform where the internal control principle was then developed into a management regulation and applies to all parties under the "see-to-it" duty, that is, all sub-contractors need to be confirmed by the contracting party as being qualified and capable of discharging the required duties. This includes a look into the management systems/control audits/verification of these companies. This activity is also risk based, with more checks expected for companies that do not have the requisite experience, pedigree or heritage in the pertinent activity.

Following Alexander Kiel land, Bravo blow out etc. Norway successfully progressed from a prescriptive legislative approach to a risk-based goal setting method where we as above mentioned also have focused on the role and responsibilities of the parties involved in the petroleum industry (the hierarchy of responsibility with the licensee/operator at the top having an overall responsibility for the responsible other parties).

The basis for the new goal setting regulatory regime was laid down in the 1985 reform.

Moving from prescriptive to goal-setting regulations, cooperation was also put high on the agenda as it was seen as central to making the new system work. The need for cooperation always existed but it was formalised and structured into the regulations.

This cooperation is known as the “three-party collaboration” or “tripartite” model.

Gradually the regulations were formulated as goal setting and the number of regulations was gradually reduced in line with the new risk based approach.

Thus the current system (i.e. post 1985) is functional/risk-based and very dynamic. They were developed in concert with the operators and the unions. The regulator does not issue permits or tell the operators what to do etc. However, they point the operators into the how to approach issues via the use of standards/guidelines (if used, the party will be seen as complying with regulatory provisions and aids in guiding operators on what risk levels are deemed acceptable. The NORSOK standards developed from this (they are the results of an industry led initiative, the regulators act as observers in the development process).

It was stated that the regulations also include risk reduction principles i.e. ALARP type considerations, of the earlier development of the risk analysis regulations.

A later development of the distribution of responsibilities is the AOC arrangements clarifying responsibilities between the contractors of the mobile facilities and the operators of these facilities.

An Acknowledgement of Compliance (AoC) is a decision by the Petroleum Safety Authority Norway that expresses the authorities' confidence that petroleum activities can be carried out using the facility within the framework of the regulations.
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:

Covered to some extent in the RNNP report.

Personal injuries.

Serious personal injuries have shown a favourable trend in recent years, reaching 0.6 per million hours worked for the whole NCS in 2011 – significantly below the average for the preceding 10 years.

The personal injury frequency on production installations was at its lowest-ever level in 2011. Even with more hours worked overall, serious injuries fell from 23 in 2010 to 17.

On mobile units, the personal injury frequency increased slightly from 2010 but was nevertheless below the average for the preceding decade. Nine such injuries were recorded in 2011, compared with five the year before.

No fatal accidents occurred on the NCS during 2011.

Sources of evidence:

Cf NO 9 - the same links covers this question.

V.21.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

a. Most of the requirements/provisions within the Directive 92/91/EEC were already in place as part of the national legislation and hence the process of transposing/implementing the directive largely focussed on confirming that this was indeed the case.

b. As a general comment, sees the current Norwegian legislation as better focused as opposed to the directive which is addressing so many things simultaneously (e.g. MAH and lighting requirements).

In summary, the Norwegian legislation includes provisions that:

a. Clarify roles and responsibilities of the parties involved (enshrined in the “see-to-it duty” that covers all hazard types – MAH and Occ. H&S) and the active duty to ensure compliance for all participants ( responsible parties (e.g. contractors, subcontractors)

b. Include provisions for Safety culture ( cover also health and working environment cf. HSE culture)

c. “ “ “ Internal Control/Safety Management System covers HSE ( health, safety and the environment)

d. “ “ “ Maintenance of SCE’s and other systems and equipment on the facility and the facility itself.

Sources of evidence:

Cf NO 9- the same links covers this question.
### Some identified limitations of Directive 92/91/EEC

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<td>a.</td>
<td>Directive 92/91/EEC places emphasis on the “employer” but does not offer a clear definition of who the employer is, hence this is open to interpretation. Some interpretations draw on the narrow sense of the term and have limited this to mean “direct employer” (i.e. the party responsible for paying wages, whilst others have used the term in a broader sense to include for example the licensee. The Directives lacks interpretative guidance for regulators in this regard (and in other areas).</td>
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<td>b.</td>
<td>Considers the concept of the H&amp;S document to be weak. Currently required to produce one, but does not include any follow up requirements (via a management system).</td>
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<tr>
<td>c.</td>
<td>The scope should be updated to address latest thinking on regulatory approaches.</td>
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<tr>
<td>d.</td>
<td>Hierarchy of responsibility should be clarified.</td>
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<tr>
<td>e.</td>
<td>The scope should be clarified further (what is covered and what is not covered e.g. shale gas), responsibility, risk based approach, management system.</td>
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### Comments on the new EU Regulations:

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<td>a.</td>
<td>Sees it as created in a silo without due and proper consideration of how the overall intentions will be met.</td>
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<tr>
<td>b.</td>
<td>There are various ways of approaching the improvements the EU want to make. This can be via agreements between the parties involved: industry led initiatives or in a new set of legislation. Exploring all the available options and in particular seeing what contribution each party can make (e.g. the industry creating standards that ensure acceptable risk levels) is considered to be a key element of good regulation. The EU has various documents that outline best practice/approaches on developing new regulation (i.e. better regulation principles) and the approach alluded to above is advocated within these documents. It is important to bear in mind these principles when preparing new EU legislation (Regulation and directives).</td>
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### Questions who identified these needs for regulation? Who is it for/aimed at? Sees an absence of a consultative process in its promulgation.

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<td>d.</td>
<td>The new regulations should ideally discriminate between the mature and immature countries’ and written in a way that suits both mature and immature countries) Regulations are not so easy to implement and (based on personal experience of seeing other EU regulations implemented). A regulation would possibly achieve this in Member States where the regulatory framework is not well developed. However, if the proposed regulation were to be implemented for offshore activities in geographical areas where robust safety principles and legal frameworks have been carefully developed over a long period of time, it represents a step backwards.</td>
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A regulation leaves little room for adaptation to existing legal frameworks. Any new EU measures on offshore safety should therefore be in the form of new or amended directive(s). Further, in states having developed robust safety principles and legal frameworks, a detailed review of existing legislation in light of an adopted regulation – with a view to adjusting the former to the extent necessary – would create a massive administrative burden and – possibly – also raise complicated legal questions. This seems particularly futile when the proposed regulation could lead to a less effective safety system.

PSA is of the opinion that a Directive should be used instead of a Regulation. This approach will give EEA/EU Member States the flexibility to continue to use robust national legislation that has served regulators and industry well for many years.

### 1.1 A regulation would mean that national legislation has to be adapted to its provisions. A regulation would therefore involve more extensive regulatory effort than a
directive in clearing up overlapping rules and interfaces. As a result, this would take time and cause a lack of clarity in the interim.

1.2 Although a regulation, after an incident like Macondo and Montara, might be the quickest way to implement best regulatory practices with respect to health, safety and the environment in all European jurisdictions with offshore oil & gas activities, to prevent a major incident from occurring in EU waters, and thus be advantaged for countries that have no little or no HSE regulatory regimes in place this is not the case with respect to Norway.

1.3 For many years Norway has had a comprehensive risk based regime in place. Major hazards are comprised and regulated by this regime.

1.4 The use of a regulation will create a gap between existing regulations and the EU regulation within its area of application in those states where offshore oil and gas activities are carried out. Norway must then amend their existing legislation.

1.5 The Norwegian regime was established in close cooperation with the parties involved, i.e. the employers and the employees during the drafting process to the finish product.

1.6 The three parties (the regulator /the PSA, the unions and the employers’ associations) also introduced a training program for the new set of HSE legislation. This was done to ensure that the users of the legislation would understand the functional and risk based principal of the regulatory regime, including the responsibility of all involved players taking part in the petroleum activities. Read more about the training and building of competence in these documents: http://www.ptil.no/news/regulatory-competence-10-years-and-10-000-graduates-article8109-79.html?lang=en_US See Annex 1-an unofficial English translation of the article in the OLF magazine.

1.7 As a consequence, amending the existing legislation by introducing the new regulatory principles in a Regulation would mean confusion and entail gross safety risks which will also undermine the objectives of the existing Norwegian HSE legislation and the objectives of the EU Regulation which is intended to create safer conditions, not the opposite.

1.8 The Commission has stated, in its justification for proposing a regulation, that it does not want the long transitional period which a directive would involve, but wishes the measures to come into force as soon as the regulation has been approved. In our experience, however, a regulation can also take a long time to be implemented for both the industry and the authorities.

1.9 A directive would mean amendments to national legislation which can be implemented in a more orderly and readily understandable fashion, building on our existing regulatory structure and, and will not compromise safety in the way a Regulation will.

1.10 f. The directive is considered to be the right approach in this area and would fit in with current EU principles on good regulation. Directive 92/91/EEC should be updated taking into consideration the framework of EU principles on Good regulation.

http://ec.europa.eu/governance/better_regulation/index_en.htm

(Linda to send link of EU Better regulation report).

g. Sees the new regulation as hugely disruptive to the existing regulatory regime/structure, cf. above points.
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:

See response in the above questions (number 12).

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:

The Norwegian offshore legislation covers both major accident hazards and occupational safety. The two principal acts are, the Petroleum Act and Working Environment Act.

The Regulator (PSA) has a risk based and dynamic approach to following up the required compliance of the players involved in the petroleum activities; cf. the main priorities in 2012 covering both Major hazard and risk exposed groups (e.g. noise and chemicals).

Read more about major hazards accidents and occupational health and safety (working environment) under topics on PSA’s website.

Sources of evidence:


http://www.ptil.no/topics/category86.html

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:

Predominantly goal-based, but some elements are prescriptive e.g. in provisions that give rights to workers (working time). The system of prescriptive safety legislation was as mentioned above abandoned in Norway in 1985.

The regulations assume that the activities maintain prudent health, environmental and safety standards. They are developed to be a good tool for the industry and for the authorities’ supervision. Therefore, the regulations contain a large degree of functional requirements where standards and norms specify the regulations’ level of prudence.

It follows from the Petroleum Act, the Pollution Control Act, the Working Environment Act and the Health Legislation that the level of health, environment and safety described in the second paragraph should be developed in step with technological developments, and also with the general development of society, cf. the purpose clauses and requirements as to satisfactory/prudent activities in the authorising acts.

In order to lay the basis for this to happen the authorities have largely turned to the regulations’ function requirements, which describe what is to be achieved rather than provide concrete solutions. At centre-stage when establishing the regulations’ required level of health, environment and safety is, alongside the wording of the regulations, the authorities’ interpretation of the body of rules, individual decisions made and guides provided by the authorities. Customary practice in the industry, requirements and specifications emerging in other documents such as nationally and internationally recognised industrial standards, for example standards drawn up under the auspices of CEN, CENELEC, ISO AND IEC, will also be normative. The same applies to industry standards prepared under the auspices of NORSOK and API etc. In addition, there are rules drawn up by classification institutions, and rules drawn up by other public authorities that do not apply directly to petroleum activities but which nonetheless are relevant to the area in question. The same is true of official requirements that are not directly applicable to petroleum activities but regulate corresponding or contiguous areas, for example requirements laid down by the Maritime Directorate, the Labour Inspection, etc.

Sources of evidence:

Framework regulations § 24
The guidelines to the respective regulations recommend solutions, inter alia in the form of industry standards, as a means of fulfilling the functional (goal setting) requirements contained in the regulations. The recommended solution becomes the recognised norm by way of this recommendation in the guidelines to the regulations. If a recommended solution is opted for, it will constitute a key basis for documenting fulfilment of official requirements.

15a. To what extent does the legislation in your country focus on “operational procedures” as a (primary) means to achieving safety & health management relative to “hazard protection”?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>• Goal-setting/Risk based.</td>
<td>Source reference(s)</td>
</tr>
<tr>
<td>• Identify +eliminate. In the first instance by technology, then residual risk is managed by processes. Never enough to manage hazards by operational processes. Follows an ISD approach. The processed is codified into regulation. See Chapter II of the Management Regulations.</td>
<td></td>
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<tr>
<td>• Key point. The inclusion of processes to manage the risk once it is identified – Not in Directive 92/91/EEC.</td>
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<tr>
<td>• No focus on operation procedures as such. However, these are regulated by the “Activities” regulations. Section 30 holds that all activities must be “safety cleared”.</td>
<td></td>
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<tr>
<td>• Roles and responsibilities are defined to a certain extent in section 7 of the Framework regulations.</td>
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<tr>
<td>• Basically, all parties (at the organisational and individual level) have an individual responsibility. See section 14 “Manning and Competency” of the Management regulations for an example of the definition of responsibilities at the individual level.</td>
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<tr>
<td>• Section 8(Internal requirements) of the Management regulations include a requirement that the responsible party shall set internal requirements that put regulatory requirements in concrete terms, and that contribute to achieving the objectives for health, safety and environment. Internal competence requirements are typical examples of this. The status of the internal requirement is taken to equal the status of the regulatory requirements. See also section 22 “handling non-conformities” of the Management regulations wherein in which non-conformities with internal requirements are given the same weight as non-conformities with legislative provisions.</td>
<td></td>
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<tr>
<td>• A 2 day training course (safety course) is provided for all individuals who work in the sector.</td>
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<tr>
<td>• The activities regulations section 21 on competence says that the responsible party shall ensure that the personnel at all times have the necessary competence to comply with the Offshore legislation and be able to handle hazard and accident situations.</td>
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</tbody>
</table>
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

**Response:**

Legislation in our country has included provisions to encourage workforce engagement from the 1970s. The Working Environment Act is a key act in this respect and the tripartite cooperation is another key element in the Norwegian model/Regime and is reflected in our rules and regulations and in various forums under the responsibility of the Regulator (PSA) and the industry in our way of following up the players of the petroleum activity.

Regulatory examples of this are the framework regulations § 13 on facilitating employee participation and Section 24 on joint Work Environment Committees.

According to the Work Environment Act and regulations issued pursuant to the act.

The elements of how to encourage a sound safety culture have been in place since the 1970s, developed further and in 2001 the actual requirement on such encouragement became part of the new framework regulations for the petroleum activities.

Thus, there is now a specific requirement for a safety culture in the current regulations. These were developed in concert with the nuclear regulators (drawing on the experience from that industry).

Safety culture is understood to be a diffuse term – one that is not easily defined and thus difficult to regulate/enforce. However, there are clear elements and provisions (for example workforce engagement, information sharing, cooperation, competency assurance, reporting requirements, handover, the management system, information duties etc.) that support the development of a safety culture. These specific requirements form the basis of the enforcement activity.

See publication (link below) on the website “HSE and Culture” for further details. This clarifies what is meant and expected of the HSE culture requirement in the regulations.

http://www.ptil.no/getfile.php/z%20Konvertert/Products%20and%20services/Publications/Dokumenter/hescultureny.pdf

**Sources of evidence:**

- Section 15 “Sound health, safety and environment culture” of Framework regulations
- Section 4 “Coordinating working environment committees…” of the Activities Regulations
- Chapter 6 and 7 of the Activities regulations includes various provisions e.g. Competence, Safety and work environment training, Procedures, Safety clearance of activities.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

**Response:**

No public sector, hence N/A.

**Sources of evidence:**

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

**Response:**

Various supporting/guidance documents exist. These include:

- Guidelines to the regulations which demonstrate how compliance can be achieved. These give predictability as to how the responsible party can comply with legislation.
- Interpretations to the various regulations.

**Sources of evidence:**
Ease of access and use is encouraged via simple to access and navigate website. Stakeholders are encouraged to contact the PSA on any issue.

Audit reports are published on the website. These can be used by other players as a check on their own operations.

Various other sections on the website which outline the regulations thinking on various issues e.g. the Risk (Topics) section.

Seminars are also conducted.

Training on regulatory requirements/provisions for individuals working in the sector.

The various Guidance documents are created and issued by the Regulators, the industry and tripartite Forums. Examples of such Forums are the safety forum, the regulatory forum and working together for safety. In most cases Guidance documents, come as a result of cooperation between these three parties.

Overall summary, there are numerous sources of information available.

V.21.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. Any hazard with the potential to cause harm is seen as a “special source” of hazard. This covers both working environment (Occ. H&S) and MAH (See Occ. H&S and MAH as inextricably linked).

The Norwegian health and safety legislation is risk based – this means that harm or danger of harm to people, the environment or material assets shall be prevented or limited in accordance with this legislation. In addition, the risk shall be further reduced to the extent possible.

b. Yes. The operator shall set acceptance criteria for major accident risk and environmental risk. The acceptance criteria shall be used when assessing result from risk analyses, cf. above.

c. No clear definition of “normal” versus “critical”, but a “critical” situation is understood to be an emergency situation which has to be planned for. What is seen as critical is defined in the Risk Analysis and Emergency Preparedness Assessment.

Sources of evidence:
The framework regulation section 11 cf. the management regulations chapter II on risk management and section 17 on risk analyses and emergency preparedness assessment

The management regulations section 9 cf. the facilities regulations section 7 on main safety functions

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

It covers all aspects (in the fullest sense design, construction etc) with the exception of the transit of mobile facilities between locations (change occur broadly at the deployment of

Sources of evidence:
Section 52 “Establishment of safety zones” Framework
In the transit phase, the Working Environment Act (WEA) applies to some degree according to regulations pursuant to the WEA.

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<th>anchors for mobiles; for jack-ups at the jack-up of legs).</th>
<th>Regulations</th>
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21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

As above, but the Petroleum Act defines facilities as installation, plant and other equipment for petroleum activities, however not supply and support vessels or ships that transport petroleum in bulk. Facility also comprises pipeline and cable unless otherwise provided. The comments regarding Section 1-6 of the Petroleum Act discuss what in particular are considered to be vessels and facilities within the meaning of the Act. It is emphasised that activities such as simple pumping activities without well control, installation or dismantling on secured and abandoned wells, as well as maintenance work on subsea templates or wellheads without penetration of the well barriers, are regarded as activities performed from vessels. This is in accordance with the current practice.

About the terms vessel and facility:

Depending on the activities executed in the petroleum activities, an executing unit is defined as a vessel or facility. The following is a description of the content of the two terms.

Vessel activities:

Activity that can be carried out by vessels will be where the executing unit is connected to a subsea well or a well on a fixed facility, but does not have primary control of the wells' block valves. The primary control of the well stream (Christmas tree or well control equipment connected to the well) is handled by a facility (from control room and/or direct operation of check valves) other than the executing unit. Vessel activity can be carried out by a facility with AoC or a vessel without AoC.

Examples of such activities include pumping of various fluids (gas and liquid) into a well through a Christmas tree or to a well valve, for fracking, stimulation, clean-up, etc., while well intervention is taking place (the well intervention personnel handle primary control of the well stream).

The same applies to activities involving maintenance of subsea wells (Christmas tree or equipment on the subsea template) or replacement of equipment on subsea wells, where one is not connected to the well, and another facility handles primary control of the well stream.

Facility activities:

Activity to be performed by a facility will be where the executing unit is connected to a subsea well with intervention equipment entering the well, and the unit has primary control of the wells’ block valves. Primary control of the well stream (Christmas tree valves or well control equipment connected to the well) is handled by the executing unit (from control room and/or direct operation of check valves). Surveillance/monitoring of the subsea well’s Christmas tree can take place at the same time from another facility. Facility activities shall be carried out by a facility with AoC.

Examples of such activities include wire line work and coiled tubing work in subsea wells where the equipment string/components are physically fed through the Christmas tree and well control equipment in/out of the well.

- Examples of implications: With regards to diving, the diving operation, equipment and people involved are covered but not the diving vessel.
- Using a heavy lift operation as an illustrative example, the Barge and the crew will

Sources of evidence:

The Petroleum Act section 1-4 on scope of application cf. section 1-6 on definitions, cf. the framework regulations section 2 and 3 with guidelines.
22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

Not relevant/Not applicable (as these activities do not exist).

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

The entire CO₂ value chain is covered, from transport to storage. Draft regulations have been created, but not adopted yet. Do these stem from the EU Directive 2009/31 on CCS? No. This directive does not cover the safety aspects. Integrity of the reservoir is not covered under the PSA, but can be covered by the NPD under the resource management. Pipelines are covered under the definition of what constitutes the facility defined as “Installation, plant and other equipment for petroleum activities, however not supply and support vessels or ships that transport petroleum in bulk. Facility also comprises pipeline and cable unless otherwise provided”. Also includes wells, cf. Question 21. The petroleum regulations apply to pipelines connected to offshore petroleum activities, in the territorial waters up to the shore slope on the mainland, regardless of whether the pipeline crosses land and re-enters the sea one or more times before reaching the mainland. These regulations also apply for pipeline systems in areas on land covered by the Petroleum Act, cf. Section 6, letter e of the Framework Regulations. This means that they apply between the point a pipeline system first crosses the shore slope, whether it is approaching an island or the mainland, and to an onshore facility. This is relevant for pipeline systems for landing petroleum as well as pipeline systems that transport other fluids in connection with operation of offshore facilities and for export of gas from onshore facilities to the Continent. Pipeline systems for transport of petroleum between onshore facilities can also be covered by the Petroleum Act (e.g. the Vestprosess pipeline, cf. Odelsting Proposition No. 46 (2002-2003)). Domestic pipeline systems for distribution of gas for consumption are normally not covered by the scope of these regulations. The offshore petroleum regulations apply to the parts of pipeline systems that are physically located offshore (e.g. in Karmsundet after first crossing Karmøy) or pipeline systems for transport of petroleum between onshore facilities when these are physically located offshore. This is a continuation of the earlier arrangement, as the Directorate for Civil Protection and Emergency Planning (DSB) has, in practice, used the technical requirements following from the offshore petroleum regulations as a basis for pipeline systems that are physically located offshore. Regarding route classification, the intention of these rules is to consider areas with population density onshore. As regards pipeline systems that are physically located in the sea, the offshore petroleum regulations with the...
recommended standards will be sufficient to safeguard the relevant considerations that are necessary for these areas. As regards the consideration for other activities, especially shipping, the risk-reducing requirements in the offshore petroleum regulations will apply in full. For the parts of pipeline systems that are physically located onshore under the scope of these regulations, whether this is an island or the mainland, the onshore legislation applies through these regulations.

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<tr>
<th>Question</th>
<th>Answer</th>
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<tr>
<td>24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?</td>
<td>The workplace is covered pursuant to the Working Environment Act, cf. the Petroleum Act. The flight is not covered; diving operations etc. are covered (see response above). The primary focus of the regulations is on the activity being conducted; where this is related to petroleum activities/operations, it will be covered, cf. Question 21.</td>
</tr>
<tr>
<td>Sources of evidence:</td>
<td>The Working Environment Act section 1-3, cf. section 1-2 (1)</td>
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<tr>
<th>Question</th>
<th>Answer</th>
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<tr>
<td>25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?</td>
<td>The hierarchy of responsibility is key in the Norwegian legal framework. According to the petroleum act, cf. the framework regulations: The operator and others participating in the activities are responsible pursuant to these regulations. The responsible party shall ensure compliance with requirements stipulated in the health, safety and environment legislation. The operator shall see to it that everyone who carries out work on its behalf, either personally, through employees, contractors or subcontractors, complies with requirements stipulated in the health, safety and environment legislation. (The see to it duty states the overall responsibility of the operator to ensure prudent activities independent of who is performing the operations on behalf of the operator (contractors etc.) In addition to the duties imposed on licensees and owners of onshore facilities by individual provisions in these regulations, they are also responsible for seeing to it that the operator complies with the requirements stipulated in the health, safety and environment legislation. (The licensees are mainly responsible for facilitating the operator’s executions of his task. The licensees are also responsible seeing to it that the operator carries these tasks and his duties.) According to Section 2-3 of the Working Environment Act and Section 25 of the Fire and Explosion Protection Act (in Norwegian only), the employees have a duty to contribute. Chapter 2 in the WEA covers the duties of the employer and the employees Section 2-2 deals with duties of the employer towards persons other than own employees; This is elaborated on in the framework regulations section 8 and section 33. The current interpretation used in Norway (Hierarchy, “see-to-it” principles) is independent of what is outlined in 92/91 (i.e. the employer) and existed prior to 92/91. The PSA could not see how the employer can be interpreted to mean the licensee. This is a key weakness in 92/91 and in the new EU legislation this needs to be addressed.</td>
</tr>
<tr>
<td>Sources of evidence:</td>
<td>The Petroleum Act section 10-6, cf. the framework regulations section 7 The Working Environment Act chapter 2, cf. the framework regulations sections 8 and 33</td>
</tr>
</tbody>
</table>
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

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<th>Response:</th>
<th>Sources of evidence:</th>
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| The Norwegian health and safety legislation addresses this at various levels e.g. in the Petroleum Act, the Working Environment Act, the framework regulations and the supplementary regulations (the management regulations in particular). Consent etc. The plan for development and operation (PDO): In the event of substantial alterations in or deviation from the plan, notification shall be submitted to the Ministry. The Ministry may require a new or amended plan to be submitted, cf. the management regulations section 25 on consent requirements for certain activities, i.e. b. prior to carrying out major modifications or changes in the use if these are not covered in the approved Plan for Development and Operation (PDO). The same principle applies to significant changes in activities as the result of new requirements or permits from other authorities, and in case the conditions on which consents have been granted by the PSA, are changed. Other changes:  
- Other changes that must be addressed according to them management regulations (probably closer to the “health and safety document” thinking of this question).  
- Changes and trends in the major accident risk and environmental risk  
- In the event of manning changes, potential consequences for health and safety and environment shall be reviewed.  
- Criteria shall be set for carrying out new analysis and/or updating existing analysis as regards changes in conditions, assumptions, knowledge and definitions that, individual or collectively, influence the risk associated with the activities.  
- The Activities regulations (section 25) stipulate that the use of facilities shall be in accordance with regulations, technical condition, and the assumptions. Hence any change in assumptions/modifications implies that changes will need to be made (i.e. a change management process).  
No clear definition of what a “Major” change is, but is understood to cover a departure from the original plan e.g. installation of a new module, major interventions, major changes in physical barriers. It will ultimately be decided on a case by case basis.  
“Major modifications as mentioned in this Section No. 3, may be the installation of a new module, major interventions in hydrocarbon-carrying systems or major changes in physical barriers.”  
All changes (major or minor) will be documented in the maintenance program for the facility.  | The Petroleum Act section 10-1, section 4-2 cf. the framework regulations section 27 Cf. the management regulations section 25 The Working Environment Act chapter 3 regarding working environment measures, particularly section 3-1 Management regulations section 13 cf. Section 25 of the Activities Regulations Section 82 “Entry into Force” of the facilities Regulations Chapter 9 “Maintenance” of the Activities Regulations |
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or a subject to independent/peer review? If so, how is this achieved?

<table>
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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>There is a requirement for the obligated party to conduct independent verification as part of their management systems.</td>
<td>Section 19 “Verifications” of the Framework regulations</td>
</tr>
<tr>
<td>“Self-check” is required under the Management regulations (which developed from the internal control principles. This is usually done in accordance with the management system required, e.g. according to ISO 9001.</td>
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<tr>
<td>“The responsible party shall determine the need for and scope of verifications, as well as the verification method and its degree of independence…” cf. the framework regulations section 19.</td>
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<tr>
<td>Note that the key factor is that the verifier should be sufficiently independent of the responsible party. Rather than full separation as in 3rd party verification.</td>
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<tr>
<td>In addition the risk requirement to follow up all elements in its own and other participants to identify deficiencies and to continues improvement by identifying the processes activities and products in need of improvement, and implementing necessary improvement measures.</td>
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<tr>
<td>These requirements must also be seen in connection with the requirement to qualification and follow-up of the participants.</td>
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<tr>
<td>In general, the regulator may also conduct audits/verifications to see whether activities have been conducted in accordance with regulatory provisions and internal requirements. Note that supervision/audits involve much more than audits. It embraces the total contact between the regulator and the regulated.</td>
<td>Management regulations section 21 on follow-up and section 23 on continuous improvement</td>
</tr>
<tr>
<td>It covers everything which gives the PSA the necessary basis to determine whether the companies are accepting their responsibility to operate acceptably in all phases. (i.e. fulfilling the regulations)</td>
<td>The framework regulation 18</td>
</tr>
<tr>
<td>Supervisory activities include investigations, considering consent applications and meetings with the industry.</td>
<td>The management regulations section 8 on internal requirements</td>
</tr>
<tr>
<td>See link to supervisory activities:</td>
<td></td>
</tr>
<tr>
<td><a href="http://www.ptil.no/supervision/supervision-article8542-88.html?lang=en_US">http://www.ptil.no/supervision/supervision-article8542-88.html?lang=en_US</a></td>
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28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and/or other independent party? If so, how is this achieved?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Obligated party is responsible for quality control of his own governing documents.</td>
<td>Re Section 25 “Consent requirements for certain activities” for the Management Regulations</td>
</tr>
<tr>
<td>See Question 25.</td>
<td></td>
</tr>
<tr>
<td>The “quality “control of the authorities is limited to handling of applications in particular e.g. concern applications and applications for AOC.</td>
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<tr>
<td>These types of quality/Compliance activities on the regulators part are also risk-based. Where there has been significant interaction with a key player, review of existing changes are usually focussed on the key changes only rather than wholesale assessment. The regulator also provides support/guidance as to how to meet regulatory requirements (not on the specific solution, but how to understand the requirements).</td>
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<tr>
<td>Consent, cf. above, is required in some situations (at key milestones/stages), but not all.</td>
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</table>
Consent is required before a facility is put into service (and must be given in sufficient time to allow regulatory review), for major modifications, any changes that have an impact on the safety and working environment, (also drilling depth of more than 200m, exploration drilling, underwater operations and disposal operations).

For Mobile offshore units, there is an Acknowledgement of Compliance (AoC) regime in place. An AoC is not the same as Consent. Granting of an AoC means that the facility may operate on the NCS, but consent is required to operate on the NCS.

Re Section 25 “Application for Acknowledgement of Compliance for certain offshore mobile facilities” in the Framework Regulations

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

All workers are covered by the legislation irrespective of whom is their direct employers provided they are part of the petroleum activities cf. the framework regulations on scope.

Certain external resources taking part in the rescue and recovery operations are not covered petroleum legislation as such but may come under it according to the petroleum act section 9-2 on emergency preparedness.

One aspect of this is the requirements to emergency preparedness in the regulations, including the emergency preparedness organisation and equipment (e.g. the emergency preparedness vessel on the field). In addition there are requirements to alert and notify the national authorities (e.g. the main rescue coordination centre) in cases of hazardous events etc.

Sources of evidence:

The Working Environment Act section 5-2
The activities regulations chapter XIII
The Petroleum Act chapter 9

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

Gender and disability issues are clearly addressed in the Working Environment Act and the Gender equality act. This requires, amongst other things the workplace to be organised so as to reflect the needs of both genders.

These Acts apply offshore. No supplementary provisions in the regulations related to the petroleum activities are necessary. Relatively high proportion of female workers in the Norwegian offshore industry relative to other geographies.

Also see page 30 in the Safety Status and Signals Report 2011/12.

Health issues can be a barrier as all workers need to be in possession of a health document to work offshore. Some workers, e.g. handicap workers, can be prevented from working offshore if they cannot meet health requirements. If this is the case, they can appeal according to procedures in the health legislation.

Sources of evidence:

The Working Environment Act Chapter 13. Protection against discrimination
Act-1978-06-09-45 relating to gender equality

V.21.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

The PSA shall stipulate premises and follow up to ensure that the players in the petroleum activities maintain high standards of health, environment, safety and emergency preparedness, and thereby also contribute to creating the greatest possible value for

Sources of evidence:

Section 67 of the Framework directive
The PSA is the regulator for technical and operational safety, including emergency preparedness, and for the working environment in all phases of the petroleum activity - such as planning, design, construction, use and possible later removal.

Authority has been delegated to the PSA by the Ministry to issue more detailed regulations for safety and the working environment in the industry, and to take specific decisions in the form of permits and consents, orders, enforcement fines, halting operations, prohibitions, dispensations and so forth.

The government has specified that the PSA will be one of three powerful coordinators for HSE regulation covering industry and society. This coordinator role relates to the development of regulations and to monitoring that they are being observed. It also involves extending, further developing and expanding the key principles of the regulatory regime established in 1985.

This regime embraces the PSA's coordinator role in relation to other regulators with independent authority in the HSE area. For the offshore part of the activity, these are the Climate and Pollution Agency (the former SFT), the Norwegian Board of Health and the Norwegian Radiation Protection Authority. The Coastal Directorate and the Norwegian Industrial Safety Organisation are also involved on the land side. Appropriate collaborative relations must also be established with local authorities and county councils.

- Thus the PSA has formal powers of enforcement for Occ. H&S issues as well as MAH.
- Various policy instruments/measures are available in discharging their duties – Non-statutory measures (e.g. dialogue – three party collaboration), audits, consent withdrawal; orders (for serious non-conformities, which must be remedied ASAP). Operators must submit a plan (which is binding) detailing how and when the issue will be remedied, Also, have powers to shut-down operations. This power is normally not used these days as the operators know when to shut down, e.g. in subsidence.

Situations, because of the weather forecast.

- All inspection activity is risk-based and targeted/prioritised based on key areas identified in reports (e.g. trend levels in risk) etc., resulting in main priorities and annual plans come as a result of this. The PSA key role is to ensure that companies are in their own right taking responsibility for matters under their control. The guiding principle is that “quality cannot be inspected into an activity. It must come from within.”
- Some consideration is also given to what can be achieved by industry (key elements which highlight the role of trust and the impact of the collaborative model) with regards to key focus areas (Part of the three party collaboration model). An example is the Safety Forum and the regulatory Forum (led by PSA), and the “Working together for safety forum” which is industry led (most of the industry takes part) (focuses on how to do things etc.) The regulator acts as an observer.

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

Seen to be smart/dynamic/forward looking (risk-based and goal setting) /focus on continuous improvement on the whole and in specific discipline areas.

This means that follow-up and continuous improvement is part of the process.

Sources of evidence:

http://www.ptil.no/priority-areas/category173.html
33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
The direct employer has a responsibility (insurance, labour law etc.).
The operator also has a legal responsibility for the safety whilst on the facility.
The transport operator has a responsibility during transit.

Sources of evidence:

V.21.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
- See the latest RNNP report for details on trends in risk levels.
- As far as regulatory competence is concerned, the “new” legislation in 2002 led to a new regulatory training programme (a tri-partite initiative) for the participants in the petroleum activities. (Approximately 11,000 people trained till date very high figure). The training program is considered a great success and has also led to the development of a strong culture/sense of ownership amongst all the parties involved. This actually means an enhanced level of safety.
- This is reflected in the RNNP report which states that all parties (particularly the industry (employers and employees) are familiar with and understand the regulations. Seen as a vote of confidence in the PSA.

Sources of evidence:
http://www.rvk.no/courses-in-english.html

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
- Overall, seen to be very effective. Cf. Earlier questions/answers about this.
- Key evidence - The activities we conduct: Courses, Seminars, Websites, A competent and strong regulator, various white papers, national and international

Sources of evidence:
**MANAGING RISK**

<table>
<thead>
<tr>
<th>collaboration, statistics in RNNP reports, also help to demonstrate its effectiveness. Cf. earlier questions/answers about this.</th>
</tr>
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<tbody>
<tr>
<td>c. 9</td>
</tr>
</tbody>
</table>

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

<table>
<thead>
<tr>
<th>a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).</td>
</tr>
<tr>
<td>c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).</td>
</tr>
</tbody>
</table>

**Response:**

<table>
<thead>
<tr>
<th>Response:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The current regime is more comprehensive than 92/91 and developed prior to it and hence it has not played a key role.</td>
</tr>
<tr>
<td>b. In Norway, the impact is seen to be minimal.</td>
</tr>
<tr>
<td>c. No opinion on Europe as a whole, but probably low in NSOAF countries.</td>
</tr>
</tbody>
</table>

**Sources of evidence:**

37. Please mention any other relevant issues from the practical application of the relevant legislation:

<table>
<thead>
<tr>
<th>a. Any notable difficulties in the practical application?</th>
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<tbody>
<tr>
<td>b. Any unexpected positive effects?</td>
</tr>
<tr>
<td>c. Any unintended (or unexpected) negative effects?</td>
</tr>
<tr>
<td>d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?</td>
</tr>
<tr>
<td>e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?</td>
</tr>
</tbody>
</table>

**Response:**

<table>
<thead>
<tr>
<th>Response:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. No. Cf. earlier questions/answers relating to the Norwegian model of application</td>
</tr>
<tr>
<td>b. Increased cooperation by the industry (the employer and employees). Industry are also expected to take a leading and proactive role to managing risk i.e. if they have identified a risk, they should take steps to mitigate it. A good example is the lifeboat project (in which significant weaknesses were identified). The solution is been championed by the industry and the regulator having an oversight role.</td>
</tr>
<tr>
<td>c. No</td>
</tr>
<tr>
<td>d. The regulations are perceived not to act as barrier to the engagement of SMEs and self-employed workers. Both are covered by the provisions dealing with qualification and following-up together with other contractors and suppliers etc.</td>
</tr>
<tr>
<td>e. Some issues identified, not related to the regulations but with the recruiting policies of the organisations. Ageing population identified as a potential issue. Not due to the regulations but rather the market and the high number of development project in the petroleum activities.</td>
</tr>
</tbody>
</table>

**Sources of evidence:**
### Evaluation

38. Are changes needed in the relevant legislation in your country?

- a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
- b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
- c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
- d. Otherwise, what changes are needed?

<table>
<thead>
<tr>
<th>Response</th>
<th>Sources of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Yes</td>
<td></td>
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<tr>
<td>b. Yes. Some regulatory review work has been done after DWH. Results currently show that the regulatory provisions are robust. No direct changes to the regulations are expected.</td>
<td></td>
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<tr>
<td>c. Yes</td>
<td></td>
</tr>
<tr>
<td>d. No, but see our answer dealing with continuous improvement etc.</td>
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</tbody>
</table>

39. Are changes needed in Directive 92/91/EEC?

- a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
- b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
- c. Does the directive specify adequate minimum safety and health requirements?
- d. Is it consistently interpreted among the Member States?
- e. Is the directive free of other significant gaps?
- f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
- g. Otherwise, what changes are needed?

<table>
<thead>
<tr>
<th>Response</th>
<th>Sources of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>a &amp; b. See previous responses.</td>
<td></td>
</tr>
<tr>
<td>c. Not when seen in the context of the Norwegian regulatory regime. But we would like to highlight some points which may improve the Directive: The hierarchy of responsibility: The Directive is not as clear as it could be at explaining the health and safety responsibilities of the key players offshore (e.g. Licensee, operator, and other contractors). As the Directive only refers to the employer, the role of each of these players is not clear (e.g. does every employer on an installation need to produce a health and safety document, or is this requirement only on the main employer). The EC should consider whether the directive should be changed and/or producing guidance to explain how the Directive should be applied to each key player offshore. This is probably most important for new entrants to the industry (operators and regulators). However, the DWH incident has increased awareness, on some issues for example clarification of roles and responsibilities.</td>
<td></td>
</tr>
<tr>
<td>The hierarchy of responsibility is important and the role of licensee who appoints the person in control of the offshore installation (the operator) should be clarified. It is important that they are required to: appoint someone who is competent; that they also provide appropriate resources for them to deliver their health and safety roles and</td>
<td></td>
</tr>
</tbody>
</table>
Responsibilities; monitor the capability of operators and their ability to discharge their responsibilities.

Maintenance management: The directive addresses maintenance only in general and not extensively. Maintenance management of the whole life cycle is very important because of the performance requirements to systems and equipment, safety critical equipment and barriers in particular.

Life cycle: The Directive does not appear to cover the whole life cycle of the installation. For example 3.1(a) covers design construction, operation, major modification and maintenance, but does not cover decommissioning, dismantling and deconstruction.

The health and safety document: Directive 92/91/EEC indicates in the Annex (Part C 1.2) that the employer shall observe the procedures and arrangements laid down in the Health and Safety Document during the planning and implementation of the relevant stages covered by the Directive. There is also a statement on implementation in the Framework Directive (Article 6 (2).

The Directive could benefit from the inclusion in Directive 92/91/EEC of a clearer statement indicating that the requirements in the health and safety document should be implemented using appropriate means, structures and management systems (including follow up and review). This means that the health and document in itself does not ensure prudent operations. It is very important to have management in place in order to establish, maintain and development further a prudent level for health, safety and environment

CF. the Norwegian regulatory regime and answer given above.

d. No response.

e. See already identified gaps.

f. No. In our view there is overlap. For example, There is clear overlap in requirements for a Health and Safety Document (Directive 92/91/EEC) and a Major Hazard Report (New European proposals).

There are also further overlaps (e.g. on general requirements to assess and control risks).

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

No effect in Norway (as already implemented), but some benefit expected in new countries.

Sees clarification of roles and responsibilities/hierarchy and management as being key/paramount in all regimes irrespective of the degree of maturity.

Sources of evidence:
V.21.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
   
   b & c. N/A

   New EU regulation will be burdensome and costly due to the approach. Of the Regulation in many principle areas being contradictory to what is already established and have been applied and enforced in mature European countries.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:
   No response.

Sources of evidence:

V.21.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions.

- What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

Considers the “directive” approach to be the best way forward for the following reasons:

- It will give EEA/EU Member states the flexibility to continue to use robust national legislation which has served both the regulators and the industry well for many years.
- The Norwegian regulatory regime comprises of a comprehensive risk-based system which has been established in close cooperation with the parties involved i.e. the...
MANAGING RISK

regulator, employers and employees from the drafting process to the finished product. This means that all players involved have a deep understanding of the regulatory requirements as they currently stand. More, importantly the consultative process used in the development and created and fostered a sense of ownership by all parties. These two elements – understanding and ownership (resulting from a consultative process) are key to the effectiveness of the regime and have developed over a long period of time.

- A regulation will have a significant negative impact on existing national regimes (mature EU countries) i.e. compromise safety levels.
- A directive would mean amendments to national legislation which can be implemented in a more orderly and readily understandable fashion, building on existing regulatory structures, and will thus not compromise safety in the way a regulation will.
- The regulation could mean that the legal situation in the EU waters changes more quickly, however this doesn’t mean that a regulation is the quickest and most effective way to deliver improved safety and environment protection across Europe (i.e. the implementation gap). For example, an EU regulation on market surveillance was developed in 2008 coming into force in 2010, but is still yet to be implemented largely because of the difficulty in understanding the contents.

Also, see responses given in Question 12.

<table>
<thead>
<tr>
<th>44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?</td>
</tr>
<tr>
<td>Response:</td>
</tr>
<tr>
<td>See responses given in Question 12.</td>
</tr>
<tr>
<td>Sources of evidence:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response:</td>
</tr>
<tr>
<td>It is not the instrument, but the requirements within it that will ensure that the risks are actively assessed and managed. The requirements in Norwegian legislation have been effective in dealing with offshore oil&amp; gas extraction in extreme environment. Our goal based approach has ensured that the industry continually improves and adopts good practices including those associated with extreme environment. If the directive was updated as described above, it would be suitable for all environments. The current directive is rather ineffective for all environmental conditions.</td>
</tr>
<tr>
<td>Sources of evidence:</td>
</tr>
</tbody>
</table>
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Sees the development of guidelines clarifying the intent of the directive as key in this regard (i.e. increasing its effectiveness). This should be considered for the existing directive and also for any future updates. Guidelines should include recommendations to share good practice amongst EU/EEA countries.</em></td>
<td></td>
</tr>
</tbody>
</table>

V.21.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>No response.</em></td>
<td></td>
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</table>

V.21.12 Attached Information

No further information
V.22. NOTES FROM INTERVIEW WITH:

Industry
OLF – the Norwegian Oil Industry Association

from

Norway
V.22.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>OLF – The Norwegian Oil Industry Association</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Industry</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Norway</td>
</tr>
</tbody>
</table>

V.22.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6.

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: N/A. Session started at Question 6.
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: 
N/A. Session started at Question 6.

Sources of evidence:

V.22.3  Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?

d. Extent and plans for other “extraction through drilling activities”.

Response: 
• Sees the NPD as a key source of this information. The FACTS 2012 publication from the NPD will contain relevant information. http://www.npd.no/en/Publications/Facts/Facts-2012/

• The energy white paper issued by the Ministry of Petroleum and Energy is also a useful source of information. (http://www.regjeringen.no/upload/OED/Petroleumsmeldingen_2011/Oversettelse/2011-06_White-paper-on-petro-activities.pdf)

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?

a. Proportions of exploration & development wells drilled onshore and offshore.

b. Proportions of oil & gas production onshore and offshore.

Response: 

a. In terms of oil and gas/petroleum activity, all activity is offshore.
b. All oil & gas production is offshore.
OLF is not aware of any material onshore relevant drilling activity.

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: 

All private sectors.

Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:
   d.  Understands the number of people employed by the industry to be on the rise.
   e.  See RNNP report.

Highlighted the fact there is a current weakness in the Norwegian reporting system in that it differs across industries. As a consequence, it is difficult to compare statistics across industries. Remarked that the UK HSE collects comparable data across all industries and would like to see such an approach adopted in Norway. Would also like to be able to compare statistics across EU countries.

Nevertheless, considers the industry to be one of the safest - by up to an order of magnitude lower than the farming and fishing sectors.

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:
   Identified Alexander Kielland, Piper Alpha, Brent Bravo and more recently DWH as key drivers.

Of the above, the Alexander Kielland was a seminal driver which resulted in a key shift in thinking in the 1995 regulations.

Remarked that:
   • The PSA operates on a high level of transparency (small incidents get published) and this helps to drive continuous change in the goal-based requirements.
   • Such continuous improvements have driven the risk to levels observed in typical office environments.
   • 2001 was a year that significantly increased the visibility of the regulations. The reform undertaken then largely involved the harmonisation of protocols and the development of the tripartite model.
   • Highlighted that political factors (i.e. who is in power) also plays a key role in the pace of evolution of regulations.

Sources of evidence:
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

<table>
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<tr>
<th>Response:</th>
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<tbody>
<tr>
<td>Highlighted that risk assessments have identified the following key areas of concern:</td>
</tr>
<tr>
<td>- Helicopters</td>
</tr>
<tr>
<td>- Lifeboats</td>
</tr>
<tr>
<td>- Noise (hearing loss) – (OCC HEALTH)</td>
</tr>
<tr>
<td>- Exposure to chemicals – (OCC HEALTH)</td>
</tr>
<tr>
<td>- Diving (These are minimal as it is mostly automated)</td>
</tr>
</tbody>
</table>

OLF has initiated a number of projects to follow up on these.

There has also been some improvement in how chemicals are used, although this has been driven by environmental concerns, but with some health and benefit.

Remarked that discharges of chemicals (hydraulics, lub oil etc.) offshore (i.e. social dumping) are lower than those from the fishing and shipping industry, yet the oil and gas is more tightly regulated/focussed upon.

**V.22.4 Regulatory approach**

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

<table>
<thead>
<tr>
<th>Response:</th>
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<tbody>
<tr>
<td>Sees the directive as a minimum directive whose provisions are closely intertwined/fully implemented/addressed within the existing legislation. The transposition of the directive has largely been in the spirit.</td>
</tr>
<tr>
<td>Highlights that the directive is not used day to day but rather the national legislation.</td>
</tr>
<tr>
<td>Sees the Norwegian regime as better and model which can be used to improve the directive.</td>
</tr>
<tr>
<td>Has full appreciation of the directive and what it intend to achieve.</td>
</tr>
</tbody>
</table>
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

**Response:**

Yes, the directive has been implemented as part of the wider legislative framework.

*The Petroleum Act governs all offshore activity and implements the directive. Understands that similar regulation exists for onshore activity; however this is currently “inactive”.*

*Considers the proposal being out forward by DG ENERGY as inadequate and better handled by DG ESAI. Also sees it as attempting to cover too many issues in one go (safety, Environmental and liability). Describes it as a bit of a “hodgepodge” and is resulting a blurring of issues. The broad nature also makes it difficult to interpret.*

*Sees the new regulation as blurring the responsibilities associated with clean-up and emergency response. It also blurs the associated liabilities.*

*Sees the speed at which at which the new regulations are being forward as detrimental to safety in the short term (“Speed can kill”).*

*Suggests that the safety related aspects within the regulations can be incorporated into the directive.*

**Sources of evidence:**

<table>
<thead>
<tr>
<th>14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong></td>
</tr>
<tr>
<td>Both. Equally.</td>
</tr>
<tr>
<td><strong>Sources of evidence:</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong></td>
</tr>
<tr>
<td>Overall, the system (referring the actual legislation/regulations) is predominately goal-based, but is supplemented with some prescriptive elements.</td>
</tr>
<tr>
<td>Highlighted that the regulations make reference to certain standards which if adopted, will be accepted as sufficient to fulfil legislative requirements. Such standards are typically prescriptive and are the responsibility of the industry e.g. the Norsok standards. Sees the use of standards in this way (i.e. not enshrined in law, but linked to it) as a good means ensuring that changes to the standard (when required) can be initiated and actioned quickly as opposed to a need to change the law which usually requires longer timescales. The approach is flexible and easily modified and thus helps to facilitate the learning process.</td>
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<tr>
<td>The law provides the opportunity to adopt other standards not reference, the only caveat is that additional justification is required to demonstrate that the adopted approach will result in a safety level that meets or exceeds that achieved by the recommended standard.</td>
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<tr>
<td>Sees the industry as having a key responsibility to improve on standards and drive continuous improvement in that area. Considers this to be the main responsibility of industry (i.e. as the risk producers, they are the best suited to understand the risks created and put in place the right procedures to manage them). Also sees the industry as being quite active in doing so (i.e. improving industry standards). One example of the industry doing so is a project OLF has initiated a project to review the learning’s from DWH with a view to identifying areas that can be improved. Also recognises that the ease of change (of</td>
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<td><strong>Sources of evidence:</strong></td>
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</table>
standards) is closely linked to the magnitude with smaller changes easier to effect as opposed to major ones.

Remarked that the new offshore safety regulation will move the responsibility for change away from the industry to the commission (which currently lacks the requisite expertise/resources).

Raised a few concerns on the new offshore regulation as follows:

- Recognises that that commission (DG ENERGY) is attempting to set out its thought on what is in effect best practice. However, sees the regulations as it currently stands as difficult to understand, vague, unclear and open-ended.
- Perceives the proposed acceptance regime by the designated competent authority’s as shifting responsibility to the government to the industry.
- Highlights similar issues (i.e. responsibility shifting) relating to the role of independent 3rd party verification bodies.
- Also sees the provisions on clean-up as moving the responsibility to the government (away from industry).

Remarked that the system is heavily biased towards/modelled on the UK model and might not work/be suitable for other locations. Went on to identify three key elements within the Norwegian regime that are different to the UK regime. First, the regulator can disapprove of submissions etc., but does not explicitly approve anything. Sees this as a key difference with what is currently proposed and one that shifts responsibilities towards the regulator (see comments above). Second, the licensee(s) is/are the parties ultimately responsible for the safety of the installation (via the “see-to-it-duty”. It is not enough to rely on the operator, the licensee has a responsibility to ensure the operator acts responsibly and conduct his/affairs with utmost prudence. Third, the internal control principle which places primary responsibility on the industry to manage its risk using internal procedures (SMS etc.).

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

Considers the following to be key elements of the Norwegian regulatory regime that help to develop and foster a safety culture:

- Employees’ are represented at the board level.
- A system in which individual workers have responsibility for themselves and can influence the work they undertake (i.e. how they execute it). This is different to how traditional hierarchies’ work which adopt top-down approaches.
- There is a system in place to have elected safety delegates at the workplace. The safety delegates are executing their duties as a part of their normal working time. At the larger installations these are full time positions.
- Requirements for continuous training.
- A dynamic evolving system that is constantly learning and developing
- Identification of causal factors places more emphasis on the system as opposed to the individual. The focus is predominantly on what it is about the system that allowed the accident to occur as opposed to individual operator/personnel errors. Recognises that this is delicate balancing act as there will be some responsibility along both dimensions i.e. at the individual and system level.

Sources of evidence:
17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: Side remarks moved to 47.

18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:
   a. Sees a strong presence/significant amount of non-legislative guidance in support of the legislation. Recognising that a lot of references are made to standards within the legislation, the various standards’ (DNV, NORSOK, ISO etc.) are understood to form a key element of the available guidance documentation.

   Some of these (i.e. the guidance documents) have been developed by OLF (in conjunction with research facilities. See the OLF website for examples).

   b. Considers the regulations to strongly depend on this. The Petroleum Act includes various guidance documents along with the regulations.

   c. Industry, independent organisations and the regulator.

   Remarked that the OLF currently has close to 150 member companies. Historically, the membership was limited to the oil majors, but has extended to include smaller players. Considers this to be a good way of knowledge/information sharing improving standards across the board as the smaller players are often inexperienced. Thus, OLF plays a key role in knowledge dissemination.

Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. All sources of risk (system wide) and conditions are understood to be covered by the legislation which clearly outlines a requirement to identify and manage the associated risks. The requirements are evolutionary in that as the risk profile changes, there is a need to adapt and identify new risks.

Advances in knowledge have to be incorporated/reflected as part of the approach to risk management.

Note that inspections are conducted to ensure that risk is being managed properly. Inspection reports are disseminated widely (i.e. across all parties) to ensure learning across the board.

b. No specific focus on MAH. As above the law requires that all risks are identified and managed.

Offered the following views/thoughts with respect to frontier areas:

- Blowouts are understood to be a key issue.
- The operator is required to demonstrate the presence of adequate barriers in place to prevent a blowout (with an emphasis on the redundancy, integrity/adequacy of barriers). The law requires 2 (two) barriers to be in place as a minimum. The law has functional requirements. It is described in the law that when more than one barrier is necessary, there should be sufficient independence between barriers. The details are given in the applicable industry standards.
- Where there are knowledge gaps on the nature/characteristics of the pertinent geological formation of the area (say for HP/HT wells), there is an expectation that more barriers will be required.
- Provided the geology of a new area is well understood, considers the blowout risk in such areas to be more or less the same as for existing areas. Drilling results along the Atlantic Margin has indicated fewer prospects with HPHT geology than hoped for. Expresses some concern that DG ENER is overly optimistic in its expectation for HPHT drilling activity.

Overall, sees the currently regulatory regime and legislative provisions to be robust (as goal-setting/functional) for current and frontier areas. However, sees that additional guidance will be required to reflect and capture the local specific issues in new areas.

c. “Normal” is understood to be within the design operating envelope; “critical” – outside the envelope. Stated that training/preparation activities for critical situations are also undertaken (in the same way as for normal operations).

Stated that the key learning from DWH is the need to ensure people understand how to react in critical situations.
20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>• Transit of a mobile unit is not covered by the national legislation (i.e. the Petroleum Act), but rather international maritime law.</td>
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<tr>
<td>• When in operation, it will be covered by the regulations.</td>
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<tr>
<td>• Design/construction activities are covered by the national legislation together with production/drilling/commissioning.</td>
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<tr>
<td>• Considers that a mobile unit will be covered by the Petroleum Act when it is under contract to a licensee.</td>
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</table>

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>• Occ. H&amp;S issues on a SBV will be governed by maritime law.</td>
<td></td>
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<tr>
<td>• Activities connected with petroleum activity such as welding of a pipeline that is being laid etc., will be covered by the Petroleum Act.</td>
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<tr>
<td>• Highlights that there are some interface issues, with regards to the cross-over point. However, these are not seen to present an issue in practise.</td>
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</table>

SBV’s will be governed by maritime law.

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>N/A</td>
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</table>

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>• Two offshore fields are currently implementing CCS technology (Sleipner and Snøhvit).</td>
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<tr>
<td>• Sees these activities as currently falling under the Petroleum Act as a connected activity.</td>
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<tr>
<td>• Sees the NPD as using the Petroleum Act to govern such future offshore activity.</td>
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</table>
24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

The legislation does not define the workplace per se, but rather includes a definition of what constitutes the facility and other connected activities.

However under the definition given, travel (by workers, not ship/helicopter crew) to/from the platform (by helicopter/boat) will be seen as a connected activity and will hence fall under the remit of the Petroleum Act and is thus covered.

Diving is also seen as a connected activity and is thus covered by the Petroleum Act.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

Primary and overall responsibility is with the licensee or license holders. This cannot be derogated.

The licensee is seen as the operator. Note that the licensee (who is also taken as the operator) can employ an operating company. Nevertheless, primary responsibility remains with the licensee for safe operation of the facility.

Typically, a consortium will be the license holder and will appoint one member as responsible party for day-to-day operations. Nevertheless, all members of the consortia remain responsible.

The see-to-it duty as discussed earlier will apply to all parties i.e. delegated downwards.

NB The government can also be a licensee through Petoro (an outfit that manages the state direct financial interest) and thus have some responsibility.

Sees the approach used in the new proposal as weak as it defines different types of “operators” thus complicating the chain of responsibility and making it opaque.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

No explicit definition given, but generally considered/understood to incorporate a material change (which can be technical, organisational or otherwise).

Such changes, where substantial/significant will be brought to the attention of the PSA/NPD i.e. there is an obligation to inform the government on key changes. The process is managed via internal processes i.e. management processes. Major changes will be communicated to the licensee management committee. Perceives that changes are seen as more important/critical from within than without (i.e. the regulator).

Side note:

Remarked that there is an obligation for all staff working offshore to undertake training (1 – 2 day duration) on the contents of the regulatory system (rights and duties).

Sources of evidence:
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
- Considered to be managed/controlled by internal control/management system assurance requirements (ISO commonly in use). These will drive the QC/QA requirements.
- The fact that most organisations use ISO will place similar requirements on suppliers and other elements of the supply chain. The Achilles system (similar to FPAL in the UK) is used to aid pre-qualification activity.
- Requirements for 3rd party verification are not built into the Norwegian approach as used in the UK. However, where the management system requires independent 3rd party verification, this is conducted.
- Some elements are subject to 3rd party verification and driven by other legislation, albeit on a prescriptive basis e.g. testing of pressure equipment in line with the PED.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
The regulators reviews documents and provide feedback.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
- Workers on vessels will in general not be covered. Military rescue helicopter and vessels will not be covered. Highlighted an example of an organisation that has been created to provide oil recovery services in the vent of a spill. Its activities are also governed by maritime law.
- Can be covered under the connected activity principle if it is associated with the petroleum activity i.e. if it is one of the responsibilities of the licensees, it should be covered. Indicated that if emergency operations are included as part of the responsibility of the licensee, then it will be covered.
- Noted that decommissioning – planned or unplanned (e.g. due to fire destruction) will be covered by the Petroleum Act.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
- No known aspect that discriminates between male and female workforce. Highlight that there is a high female workforce (of the order of 25%).
- Health qualifications required for offshore workers (to determine capacity/ability to fulfil the requirements of the role). Insurance schemes are available for those

Sources of evidence:
who do not pass the test or for whom their health subsequently deteriorates.

- Also covered by the Working Environment Act.

V.22.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

- Risk-based for both onshore/offshore.
- Some differences apply in terms of the scope of application to onshore facilities. Will apply onshore for “connected activities”. Onshore plants are defined as “in” or “out” on case by case basis.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

- Some aspects where we “overdo it” (i.e. go beyond ALARP and spend too much on safety).
- Other areas where we have challenges (e.g. Occ H&S).
- Challenges of compliance at a personal level (mostly cultural).
- Generally sees it to be best-in-class.
- As we go to smaller/more marginal fields need to get rid of some of gold-plating. The focus should be on fit for purpose rather than gold-plating. The savings would be better spent on other areas. (From a society point of view other areas should get investment (e.g. fishing).

Remarked that the ALARP concept is well understood and accepted in the industry. This can be useful in reducing the level of gold-plating.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

- Licensees/operators and every other party down the line. The “see-to-it” duty places responsibilities on all involved parties. For example, the helicopter operator will be the responsibility of the operators/licensee (under contractual obligations). (NB Responsibilities will not apply in non-contracted helicopters e.g. rescue or military helicopters).
- Sees the regulators as employer as having some responsibilities (with regards to working time for its staff).

Sources of evidence:
V.22.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

- Places primary responsibility for safety on the industry that has to react accordingly (and does).
- Considers the overall regulatory regime/system as working to improve safety across the board. Key to this is the way the system is structured/organised. The tri-partite model is a key element of this and helps to develop and foster trust between all parties. It has also helped to develop a high level of cohesiveness and transparency between the players. Sees these contextual factors (which are often unspoken, unwritten or hidden in the background) as a central to the success of the regime and is concerned that they will be “lost-in-translation”/not given due and proper recognition within the new proposed EU regulatory proposal.
- Stated that the high levels of transparency is instrumental to and help to improve safety in the industry but at the same time expressed concern on the “backlash” due to the high levels of openness adopted by the regulator, industry and unions. For example, the Gullfaks incident was used by Bellona/DG ENERGY in a subversive way to undermine the credibility of the industry. Despite this, considers transparency as key to improving safety standards.
- Remarked that A new regulation needs a proper understanding of the contextual factors that exist
- Recommendations from the Imperial/Maitland UK Offshore Oil and Gas in the UK Review http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/oil-gas/3875-offshore-oil-gas-uk-ind-rev.pdf are not reflected in the proposals from DG Energy and should be considered for incorporation in 92/91 or supporting material.
- The existing regulations include very strong links between all the elements. For example the standards are referenced within the regulations. Changing this will destabilise the system that has been built over a significant period of time. The major impact will be on the industry and the regulator who will take their “eyes of the ball”.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:

a) See above.
b) Indicated we consult the RNNP report and other stats from the regulator. Considers the record to be excellent based on history till date. Highlighted that more people work in the industry (despite a reduction in production) and this has resulted in less direct exposure.
c) Considers it to be highly effective (10/10). Sees the others North Sea regimes in a similar light i.e. the North Sea countries as “best in class”. Nevertheless, within the North...
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

See previous response. Current regime not driven by the provisions of Directive 92/91/EEC.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

a. N/A

b & c. One important positive effect is the harmonisation of standards in Norway (e.g., the Norsok standards. Wants to see the standards being used more globally, hence advocates for the development of more and better international standards. Sees this as necessary to improving safety levels across the industry.

Understands that about 300 standards are mentioned in the UK/Norwegian/Danish Regulations but only 6 of these are common across all three regimes.

For e.g. supply vessels/ships operate to IMO standards/regulations. They can work internationally BUT with MODUS, there are differences between the provisions required in the different geographies. This creates local markets (high prices) for certain rigs and thus acts as a barrier to free trade. Recognises that this is not an issue directly related to Directive 92/91/EEC but rather local regulatory provisions.

Sees the use of globally accepted standard across the various regulatory regimes/geographies as a key way to achieving a level playing field.

d. Sees the regulations to be fair to SME’s and the self-employed, particularly as it delivers high levels of safety to those employed by organisations at this level.

e. Indicated that current turnover in the industry is low and this has raised some issues with regards to an ageing workforce. Sees this as an issue that can be effectively managed. Also sees Norway as benefitting from a highly educated population.

In regard to the new EU regulation, remarked that:
   • No need for revolution, just continuous evolution.
   • The currently system is so interwoven and structured that if torn down will cause.

Sources of evidence:
have significant implications for safety.

- Expressed concern on the bureaucratic elements (the need to update the legislative structure/create new standards etc.) of the proposed changes as these would present significant challenges for the regulator and industry.
- The Imperial/Maitland UK Offshore Oil and Gas in the UK Review (independent review of the regulatory regime) portrays a complex system that is not only effective but one that also offers opportunities for improvement.

### V.22.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   
a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?

   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?

   d. Otherwise, what changes are needed?

```
Response:
- Sees the legislative provisions to be robust and not requiring changes. Recommends some changes to the supporting documents i.e. guidance documents/standards etc.
```

### Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   
a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?

   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

   c. Does the directive specify adequate minimum safety and health requirements?

   d. Is it consistently interpreted among the Member States?

   e. Is the directive free of other significant gaps?

   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?

   g. Otherwise, what changes are needed?

```
Response:
- Incorporate some of ideas from the proposal from DG Energy Proposals into directive (without the UK focus). As it stands, it is currently modelled on the UK regime, would like to see it reflect elements from the other regimes.

- Also incorporate some of the ideas from Imperial/Maitland UK Offshore Oil and Gas in the UK Review.

- Also incorporate ideas from OLFs report soon to be published: http://www.olf.no/en/
```

### Sources of evidence:
40. What would be the cumulative effect of the changes you have proposed to the directive?

a. What would be the cumulative effect of the changes?

b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

- Help harmonising practices across the EU. Common standards in Europe will break down barrier to trade.
- Additional soft law tools would provide quicker knowledge transfer to less mature countries.
- Incremental improvement for mature countries.
- Good for effectiveness/business.
- Would result in a directive that raises the bar whilst at the same time setting minimum standards.

Sources of evidence:

V.22.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?

a. Please outline the administrative burden implementing the directive in your country.

b. What (if any) objective measures are available to evaluate the burden?

c. Are any changes needed to minimise it?

Response:

The burden is appreciable, particularly with regard to the need to develop different reporting requirements to the NPD and the PSA. Would like to see harmonisation of reporting protocols across different government department and in particular would not like to add an additional burden of reporting requirements to the EU (based on the new proposals). Would like the update to Directive 92/91/EEC to be mindful of this and in particular take note of the commission’s better regulation protocols/policy.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?

a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.

b. How can the burden be minimised?

c. Can existing systems cope with the extra requirements?

Response:

See response to Q 41.

Sources of evidence:
V.22.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: 
Sees the regulation as a good option, but if it is to be used, the scope has to be correct. However, considers the directive approach to be the preferred option to achieve minimum standards. Also see the directive approach as more suitable for system wide changes (less disruptive).

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: 
Would be willing in principle to support countries new to this industry; in practice some budgetary/practical barriers might apply.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response: 
See earlier responses.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

Response: 
See earlier responses.

Sources of evidence:
V.22.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

- Sees Norway as having high helicopter safety standards—way in excess of what is required by the EU, leading to a significant better safety performance.
- Sees soft regulation as better legal instrument for new countries to implement best practice as opposed to a new regulation.
- The subsidiarity principles are not honoured in the Commission’s proposal for Offshore Safety Regulation.

Sources of evidence:

Source reference(s)

V.22.12 Attached Information

No further information.
V.23. NOTES FROM INTERVIEW WITH:

Union
SAFE and Industri Energi

from
Norway
V.23.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>SAFE / Industri Energi</th>
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</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Union - Worker representative</td>
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<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Norway</td>
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</table>

V.23.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: 
   See subsequent responses.

   Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: 
   See subsequent responses.

   Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.
Response:

- The “Works and Env. Committee” must be maintained. This provides a safety net.

Have reviewed the DWH incident and asked drillers about would have happened if that situation had occurred in Norway. This work highlighted the following:

- Employer can go to safety representative/delegate who is empowered to stop work.
- Safety delegate represents the whole workforce.
- See many companies are using US human resources style approaches to put power in the hands of the employer. However see need for a balance - and those checks and balances are in place in Norway.
- The culture has to be supportive of the safety delegate and must take decisions seriously.
- Results achieved is proof this works.

Unions have their H&S departments. Safety delegates are not involved in other areas (e.g. wage negotiations). The current system in Norway has a healthy divide between wage negotiations and HSE matters.

With regards to engagement across stakeholders:

- It must be an active process which involves all parties.
- When regulations are developed this way, the 3 parties gain ownership.
- Also helps with wording/language to be good for workers, etc. (key point).
- Also helps with making practical.
- Involvement gives safety delegates a sense of security/ownership/responsibility.

NB Norwegian Onshore regulators have copied the PSA’s relationship forum because it works. Believe Danish regulator is following the same model.

Parties involved are those with direct involvement: Regulator, Unions, Companies, (Operators and Contractors). NGOs not included.

Considers Norway to have “most open and transparent regulatory environment” around. There are a number of forums and a number of projects which come out of the tri-party forum.

Tri-party not driven by accidents – actually came from indicators coming from downwind trends being seen by PSA. [NB Unions asked Minister for forum – They agreed. This is thanks to proactive system.].

Note for EU ➔ Need to also take this on board to work for their work.

- Need respect between all parties to be successful.
- May be a challenge for a country with different cultures.
- Could require cultural changes.
- Not to go for behavior based safety.

Sources of evidence:

| 4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas? |
|---|---|
| **Response:** |
| See subsequent responses. |
| **Sources of evidence:** |

| 5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation? |
|---|---|
| **Response:** |
| Initiate a system of openness between democratic organisations (e.g. key stakeholders). |
| **Sources of evidence:** |
Parties which are opposed to a whole industry would hinder in creations of standards and guidelines as they have a different agenda (e.g. NGO’s).

Stated that the DWH report from the Chemical Safety Report still yet to be published. Nevertheless, the record of events up to the incident indicates that BP reps were on-board to hand-out LTA zero awards and Transocean handed out bonus for good H&S. Such awards can lead to under reporting. Measuring LTI leads to a focus on Occ. H&S and a lack of attention on MHHs and also occupational injuries due to long term exposure.

The RNNP report published by the PSA is designed to provide an indication of the risk status in the industry i.e. a measure of the risks status. For this, the PSA collects data from various sources. Also uses information gathered via a questionnaire disseminated bi-annually to all offshore workers.

The scope of the above needs to cover all hazard types’ i.e. acute and chronic Occ. H&S incidents, together with MAH.

Remarked that:

The regulations in Norway require special equipment for pipe handling which is widely used as it saves life and improves efficiency.

Sees the hierarchy of control model in Norway as particularly important and would like to see this incorporated into any new regulation.

- Cultural issues (and attitudes to risk) also play a key role and should be taken into consideration. Highlighted the example of the SINTEF helicopter report which identified cultural differences between UK & Norway in regard to the decisions made on one of the conclusions of the report (re-metal flacks in gear box).
- The level of input of the unions to standards and guidelines is not satisfactory.
- Would like improved clarity on the process adopted by operators to demonstrate safety (i.e. where a decision has been made not to follow a recognised standard).
- Safety delegates are currently consulted with and engaged in the AoC (Acknowledgement of Compliance) regime for mobile offshore facilities. This has helped to increase involvement as well as build competence/knowledge.

V.23.3  Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.
b. How many exploration & development wells drilled annually, and expected trends?
c. How much oil & gas production annually, and expected trends?
d. Extent and plans for other “extraction through drilling activities”.

Response:
N/A

Sources of evidence:
7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

   **Response:**
   100% Offshore, but there are attachments/connections to downstream process plant located onshore. Sees the Ormen Lange development as a clear example of putting an offshore plant onshore. (NB the exploration and drilling activity only occurs offshore with processing onshore).

   **Sources of evidence:**

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

   **Response:**
   All public sectors.

   **Sources of evidence:**

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

   **Response:**
   N/A

   **Sources of evidence:**

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

    **Response:**
    Sees the most major changes as those that occurred in the regulatory reform of 2001/2 and these were driven by trend data. This led to industry changing its practices (albeit reluctantly) to embrace a more proactive forward looking approach to risk management. Also considers the NORNE helicopter accident in 1997 as a game changer/pivotal moment. It changed perceptions/attitudes to helicopter safety as operators came to the realisation that they were seen as the responsible parties irrespective of who was directly responsible.

    **Sources of evidence:**
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:
Considers it particularly difficult to get good data/focus on occupational illnesses as it takes a while. Noted that the available statistics are not good as delayed effects for people who leave the industry are missing from the data. See the above as key challenges to generating good data. Nevertheless, a current problem that has been identified is noise, especially with pilots as modern helicopters have twice the horsepower and are thus louder.

Sources of evidence:

V.23.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:
N/A

Sources of evidence:

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:
N/A

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
Sees both hazard types as covered, although the balance is shifting to place more emphasis on MAHs (as reflected in the latest RNNP reports).

Sources of evidence:
15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

**Response:**

Understands that Lifeboats have to perform to goal. However, recent “live” functional tests identified that the boats would not perform as expected. This was despite the fact that the boats were independently certified. Highlights the importance of validation via “live” functional testing as opposed to paperwork/design certification. The regulations NEED to include provisions that allow provide safety reps with the power/authority to request functional tests for equipment. Indicates that not all provisions should be goal setting, particularly as safety reps do not have the power to challenge the adequacy of the adopted solutions due to lack of resources and expertise. As a result sees a need for prescription in some areas such as: Worker hours, Noise exposure, Fumes, Use of chemicals, Accommodation. NB The law as it stands governs activities in the aforementioned areas, however would like prescriptive provisions in areas that relate to specific direct protection to workers. Contends that elements that pertain directly to worker safety should be made explicit and set in stone rather than left vague (as often applies with goal-setting provisions).

**Sources of evidence:**

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

**Response:**

Made the following remarks with regards to elements that foster a safety culture:

- Almost all employees are organised (i.e. part of the union). This enables members to have a voice in key issues and promotes dispute resolution.
- There is a collective organised system that set out how employees/employers should interact (i.e. the tri-partite system). This helps solve disputes at lowest possible level.
- The legislation that governs how companies are managed gives unions representation.
- The working environment act also plays a key role (This is the implementation of the EU framework directive).
- High levels of transparency within the industry.
- “Whistle Blowing” is encouraged and whistle blowers are protected by Unions (via anonymity). However, organisations typically find ways to identify the person(s) involved, thus they need protection from recrimination and victimisation.
- The law also offers protection BUT need spine to protect and thus requires the involvement of the government/union. (Being seen as a serious/responsible Union with "teeth" helps).
- Reg proposal says want to achieve transparency but provides no clear means to achieve this. Transparency requires mechanisms to protect people and the unions provide this i.e. anonymity. For this the unions need to possess influence (a less direct form of power).
- Have a “working together for safety” forum which is a sharing project between the stakeholders. This is voluntary, expected (due to the tripartite model) and highly recommended.
- Also, the 3 parties agreed to quality assure training courses but this was never initiated. OLF have an assurance system which works OK. However, would like this to be tri-party driven.
- Sees need to build training/knowledge as activities move towards the new areas, e.g. Barents Sea.
- On the issue of working in new frontier areas.
- Does not see the need for Nat Regulations to change but would like regulator to be
### MANAGING RISK

- More proactive in recognising the new challenges these areas bring
- Workers will come from Norway and beyond, hence it will important that issues are widely understood and safety is a priority – could be where EU could take a leading role.
- Key challenges stem from the remoteness and accessibility which have implications for emergency response activity.

↑ The last two points are OPPORTUNITIES TO BE PROACTIVE ON A EUROPEAN LEVEL.
- Need to understand what the effects are of working in darkness and cold for cold for extended periods. Guidance on the above and other issues is needed urgently. Feels the current response is a bit slow.
- Currently aware of good solutions from ENI & Statoil, but these are not not even at the industry level but limited to two players. What happens to workers that do not work for these two organisations?
- A possible solution is to develop an area strategy that will act as a driver for action. Wants more proactive engagement from the EU on this issue.

#### 17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

**Response:**

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<td>N/A</td>
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#### 18. What non-legislative guidance is used / available in your country?

- **a.** What non-legislative guidance is available (if any)?
- **b.** To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
- **c.** By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

**Response:**

- **There are industry guidelines. Mostly issued by OLF, Norwegian Ship Owners, Working together for Safety forum. Sometimes workers have been involved in the development process. Have requested OLF to identify areas in which worker involvement is required.**
- **Likes the guidelines approach because they are followed e.g. OLF 066 for helicopters is rigorously followed.**
- **Some guidelines are updated frequently whilst others not much e.g. NORSOK standard for cranes. Would like “PSA” to be more focused on getting timely updates to the guidelines. Sees the regulator as weak in this area.**
- **Would also like the regulator to identify when a standard is no longer understood to be adequate.**
- **Doesn’t see the point of audits, when they are done to confirm the provisions of standard’s that are out of date.**
- **Highlights the fact that most of the standards are typically developed in concert with the licensee/operator and do not always include the work force, particularly in the development of operational standards. All standards NEED to involve the workforce in their development.**
V.23.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:
Understands the regulations to be quite broad in scope so as to cover all types of hazards in both normal and abnormal conditions.
The regulations also cover transport of injured/sick personnel.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:
The regulations do not cover transit/movement; this aspect is covered by maritime/flag state law. The regulations are understood to apply when the facility is anchored.
In theory, the role of the safety delegate stops in movement. However, in practice this does not occur for movement within Norwegian waters.
Under some circumstances the working environment act applies during transit. It applies during “normal” national transit on the shelf, but not when in transit out of or in international waters and other national shelf’s normally. The act can be applicable due to civilian contracts such as contract for employment/work.
Would like to see the regulations extend to shore-based maintenance activity (i.e. when the facility is undergoing refits NOT construction etc.) as the shore based regulators are not seen as competent/having the requisite expertise. Wants to see the PSA playing a bigger role in this area as they are seen to have the relevant expertise.

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:
Shuttle tankers/SBV is not covered; these are under maritime law.
Construction and decommissioning activities are covered. The planning and design activities are also governed by the PSA regulations BUT the actual construction activities are not.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:
N/A

Sources of evidence:
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Yes. The regulations cover drilling related activity such as underground storage of material. For example, the Karsto gas processing facility has an underground storage facility and is covered under the PSA regulations.</td>
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24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

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<th>Response:</th>
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<tbody>
<tr>
<td>Understands the workplace not be defined in the PSA regulations but is defined in the Working Environment Act.</td>
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<tr>
<td>Sees ship transfer as not being covered by either the WEA or the PSA.</td>
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<tr>
<td>Diving operations are covered by the PSA.</td>
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25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

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<tr>
<td>The key focus is on the licensee (who can also be the operator) as the responsible party.</td>
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<tr>
<td>Current process was developed from issues relating to lack of clarity surrounding responsibilities of sub-contractors.</td>
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<tr>
<td>Each employer is also directly responsible for their employees.</td>
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26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

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<tr>
<td>Not directly knowledgeable on this, advised we clarified this from the PSA.</td>
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<tr>
<td>The unions have raised concerns with the PSA about organisational changes not being properly risk assessed/considered as a key change. The PSA have agreed with point of view and now consider it to be a key change.</td>
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<tr>
<td>Considers that assessments are required for all types of change – visible or invisible.</td>
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<tr>
<td>Highlighted the importance of the “latent knowledge” of key workers which is often critical to safe operation.</td>
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<td>Wants to see organisational changes properly address the issue of knowledge management (particularly in the case of workforce reductions).</td>
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27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
Licence to operate defines standards to operate to.
Must be auditable.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
Consult PSA.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
Not as it should.
Remarked that standard differs between the safety provisions for workers on a facility (PSA regs.) as opposed to workers on a maritime vessel (maritime law). Such differences create a gulf between workers e.g. an “A-team” versus a “B-team”.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
Handicapped workers do not work offshore as they will not be able to fulfil the requirements to secure a health certificate.
Some issues have arisen with regards to cabins for female workers; but not on a scale to create significant concern.
Provisions are in place for pregnant women and this area is handled as best as it can be.
Considers the industry to be an equal opportunities sector.

Sources of evidence:

V.23.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:
Sees the enforcement as a much civilised process – indicative of the high levels of trust and cooperation that exist between the key stakeholders.

Sources of evidence:
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

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<tr>
<td>Considers it to be world class. Can be improved by increasing the levels of involvement/engagement between all stakeholders on the safety agenda. Some companies behave well and this is probably the majority. Some, the minority, behave less well and should get more attention and sometimes they could lose their permit to operate in Norway. Hence, enforcement activity can also be improved by discriminating between the ways good/bad companies are treated.</td>
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33. Who is legally responsible for the safety of regulators/enforcement officers while offshore or during transport to offshore installations?

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<tr>
<td>Considers the licensee/operator to be legally responsible.</td>
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### V.23.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

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<td>Has resulted in a safe working environment within the industry. Remarked that “would support own children working offshore.”</td>
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</table>

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

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36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
   a. Not as a direct result of the directive as such, but rather a result of a healthy national culture in the government, the industry and the trade unions. Namely a result of a three-partite national culture and a press that focuses on relevant issues. Bad press makes for good practice.
   b. 9, but with the above comments.
   c. 9, but with the above comments.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:
Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.

Sources of evidence:

V.23.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
Changes must be an ongoing process with all stakeholders in an open and transparent environment. Safety is not a place, but the result of a process. The DWH accident is a result of a malign culture and not due to regulation or technology.

Sources of evidence:
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response: Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
   a. If the result is transparency it will make nature and humans safer. The process MUST include all three parties (stakeholders) namely government, employers and employees.
   b. If it happens it will take time and effort and the changes would probably be years to come, but there is no alternative and no time to loose. I would guess that we could achieve 7 or 8 in 10 years if we all work on this together.

Sources of evidence:

V.23.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

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<td>Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.</td>
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V.23.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions.

- What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

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<tr>
<td>A directive will have a better chance of recruiting the best efforts of the petroleum nations and to achieve good results in each nation’s competence level. EU must create a best practice system where all EU/EEA nations participate. Evolved and wealthy nations should shoulder a heavier burden to help “lift” the nations that are developing as petroleum nations.</td>
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44. In your opinion is the directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

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<tbody>
<tr>
<td>Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.</td>
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45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

In my opinion a regulative will hinder development locally and a directive is therefore the only sane answer. Regardless of system nothing much will happen unless EU takes active steps to have an open and aggressive approach towards regional and international excellence. Our citizens and nature deserve no less.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:

Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.

Sources of evidence:

V.23.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

Not answered. Interview cut short due to time constraints. See earlier questions for partial responses.

Sources of evidence:

V.23.12 Attached Information

No further information.
V.24. NOTES FROM INTERVIEW WITH:

Regulator
Ministry of Economy, Ministry of the Environment, District Mining Office in Warsaw, Nadinspektor Pracy Polish Labour Inspection, State Mining Authority

from
Poland
**V.24.1 Demographic Questions**

| Organisation: | 1) Maciej Bialek, Chief Expert, Oil and Gas Department, Ministry of Economy  
|              | 2) Magdalena Gucwa-Rydelek, Senior Specialist, Hydrocarbons division, Department of Geology and Geological Concessions, Ministry of the Environment  
|              | 3) Bogdan Kaśnierz, Director, District Mining Office in Warsaw  
|              | 4) Bernard Dąbrowski, Nadinspektor pracy Polish Labour Inspection  
|              | 5) Magdalena Bohusz-Boguszewska, Department on Mining, Ministry of Economy  
|              | 6) Rafał Dąbrowski, Department on Mining, Ministry of Economy  
|              | 7) Magdalena Śmieszek, Senior specialist, Department of Law, State Mining Authority |

**Stakeholder type:**  
(e.g. Government/Regulator, Trade association/Operator, Union, NGO)  
*Regulator*

**EU/EEA country/counties in which your organisation operates:**  
*Poland*

**V.24.2 Initial questions**

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?  
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?  
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?  
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?  
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO\textsubscript{2} injection, CCS and fracking?  

   **Response:**  
   *N/A. Session started at Question 6.*  

   **Sources of evidence:**

2. How effective is the relevant legislation in your country?  
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.  

   **Response:**  
   *N/A. Session started at Question 6.*  

   **Sources of evidence:**
3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: *N/A. Session started at Question 6.*

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: *N/A. Session started at Question 6.*

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

   Response: *N/A. Session started at Question 6.*

V.24.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Sources of evidence:
Response:

Oil and Gas Drilling Statistics 255 concessions were granted for Conventional and Unconventional gas. For Unconventional gas (i.e. Shale gas) the following data is available:

- 110 concessions were granted;
- 248 wells are envisaged to be drilled in the period up to 2017. 121 of these are confirmed to be drilled; the other 127 are optional/tentative.
- Until May 23th 2012 only 21 wells have been drilled, but until July 24th – 25 wells.

NB. The above is based on the available concession data. Some changes in this date are possible because of concession’s changing or scope of its geological works. All activity is still in the exploration phase. There is currently no shale gas production.

Volume Produced:

Gas: 5.5 billion m³ of conventional gas was produced in 2010. It is hoped that production trend of Unconventional gas will depend on the level of exploration of those deposits.

Oil: Approximately 667 460 tonnes per year in 2010.


- Oil and Gas
- Salt
- Sulphur
- Therapeutic and thermal waters and brines
- Methane from seams

Underground gas storage:

- Underground storage of waste

Sources of evidence:
7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

   **Response:**

   *Activity between offshore and onshore industries can be counted based on the number of granted concessions:*
   
   a. The following applies for July 24th 2012
      
      **Exploration - oil and gas concessions:**
      
      - Onshore: 249 concessions
      - Offshore: 7 concessions
      
      **Production - oil and gas concession:**
      
      - Onshore: 231 concessions
      - Offshore: 4 concessions (1 new application is applied)

   *At the present time, unconventional gas activities are planned offshore. There are 7 granted concessions for exploration activities and 3 applied application for these activities (Lotos Petrobaltic S.A.)*

   **Production of gas in 2010:**
   
   - **Onshore:**
     - 3.8 billion m$^3$ (which contains less than 84% of methane) - 69.12% and 1.7 billion m$^3$ (which contains more than 84% of methane) - 30.51%
   
   - **Offshore:**
     - 0.02 billion m$^3$ (which contains less than 84% of methane) - 0.37%

   **b. Oil production in 2010**
   
   - **Offshore:**
     - 186,830 tonnes – 28%
   
   - **Onshore:**
     - 480,630 tonnes – 72%

   **Sources of evidence:**

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

   **Response:**

   *The key players in the Polish Oil and Gas industry are PGNiG, Grupa LOTOS (PetroBaltic, its subsidiary active in offshore) and ORLEN. The State treasury has a significant stake holding in some of the players (Grupa LOTOS – State Treasury holds 53.19% of shares, PKN ORLEN – State Treasury holds 27.52% of shares, PGNiG – State Treasury holds directly 73.50% of shares).*

   *Notwithstanding the shared ownership (i.e. between the public and the state), there is no material difference between the public/private sector – in essence they can be all be referred to as private sector organisations with the state as majority shareholder. They are all regulated in the same way and have to fulfil all their obligations under the law. In this regard, all exploration and production activity is limited to the private sector.*

   **Sources of evidence:**

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
e. Please provide data sources (if available).

Response:

The State Mining Authority is responsible for collating accident data. The data can be accessed online at www.wug.gov.pl.

The following data (in black font) was taken from the above website:

Occupational Illness:
The site contains data on Occupational illnesses in the mining industry as a whole with some specific data for oil and gas covering the period between 2005 and 2006. In general, the Oil and Gas data shows limited instances of occupational illness (of the order of 1 or 2 cases per year) and only relating to impaired hearing.

Accident statistics:
The statistics from the website are for the mining industry as a whole and do not show data specific to the oil and gas industry.

Over the last ten year period, there has been 1 fatality. The injury statistics also show a flat trend. Data on injury rates across the different industry sectors are also available and can be supplied on request.

The accidents rates for the Oil and gas sector are understood to be better than those for other sectors (e.g. mining).

Number of people employed in the industry is ~ 5 000 (data presented at the WUG website http://www.wug.gov.pl/index.php?english/supervised_plants).

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

A number of incidents have provided significant lessons. This includes:

- A blowout in 1980. The release was ignited but there were no fatalities.
- Two fatal incidents in 1994/5 that stemmed from explosions and the use of pressurised air hoses. This led to a ban on the use of pressurised hoses.

On the whole, the national legislation related to drilling and mining has evolved incrementally over the years based on a desire to identify and implement good-practice. The transposition of the Directive (as part of the accession programme) was also a key point in the evolution of the national legislation. A gap analysis was conducted as part of the implementation which showed that on the whole most of the provisions already existed in the national legislation, albeit with a few improvement areas that were subsequently addressed.

Key changes to the Geological and Mining Law in 1994, 2001 and more recently in 2011. The geological and mining law governs all mining and drilling activity and the provisions of Directive 92/91 have been implemented within it. The drivers for the change varied but included:

- a desire to incorporate best-practice i.e. as a continuous improvement initiative.
- incidents (including fatalities).
- Input from advisory bodies and wider society (e.g. academics and scientific organisations).
- Modernisation.

Sources of evidence:
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:
See Question 9.

A key issue here is the difficulty in establishing causality due to the delayed effect (symptoms show after many years, > 10) and a plurality of causal factors/sources.

V.24.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being "literal" or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:
Also see response to Question 10.

A comparison between the provisions of the Directive and the national legislation was undertaken. For the most part of the provisions were already addressed, but a few provisions needed to be expanded and clarified further. In general, the provisions within the national legislation were found to be more detailed and specific in comparison to those in the directive.

The provisions within the directive are transposed and implemented in various items of national legislation (the Geological and Mining Law).
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:
Wider legislative framework. See response to Question 12.

The national legislation in Poland is structured/organised with respect to mining activity as follows:
1. The geological and mining law which governs all mining related activity. This also includes items of legislation that address specific issues.
2. The labour law which applies to all workers in all industries.

In addition to the above, there are other items of legislation that also need to be complied with. For example, offshore drilling activity need to fulfil certain technical requirements related to maritime extraction which is regulated by the Ministry of Transport, Construction and Maritime Economy. Furthermore, offshore transport related activity needs to comply with transport law administered by the Department of Maritime Transport and Shipping Safety (the Ministry of Transport, Construction and Maritime Economy).

Sources of evidence:
Source reference(s)

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
See response to Question 31.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
The national legislation is very prescriptive (very much so).

NB
1. Human error/compliance issues/poor implementation is often identified as the cause of accidents. Factors such as these are practical in nature and cannot be addressed via regulation. These are considered to be the responsibility of the industry.
2. The law as it is (prescriptive) prescribes the minimum. It can be improved upon (i.e. added to) BUT not changed. Full compliance with legislative provisions is required.

Sources of evidence:
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

**With regards to safety culture, the following apply:**

1. Once a year, a competition is held between employees on issues regarding H&S in the mining sector. This helps to build/develop awareness of safety issues as well as the legislation. The competition is also used to address the tension that exists between commercial imperatives and safety (which is understood to be key challenge).

2. Controls are also conducted by inspectors. By imposing additional bureaucratic elements in the form of additional documentation, the new ILO Labour Law acts as a barrier to this type of activity.

3. Work instructions and the safety and health document have to be developed in concert with the workforce.

4. By law (labour law), a representative who will address a range of issues related to the workforce (both labour and safety) is required.
   - It is mandatory to have a representative where there are more than 50 employees even if there is no union.
   - The key role of the representative is to communicate issues between the workforce and the employer.
   - The role can be exclusively limited to labour related activity or can include both labour and safety.
   - The representative can issue recommendations to the employer (who is obliged to act of them). Where the action implemented is deemed unsatisfactory, the rep can escalate the issues to the regulator (the labour inspectorate) who will look into the matter.
   - The role of a safety representative is seen to be key to ensuring safety on a facility. Personnel in a supervisory role are important for maintaining good behaviour.

5. There are also anonymous reporting mechanisms (via phone or email) that are used quite regularly. Reports have been made to the labour inspectorate. In high risk situations, such reports are dealt with immediately. In other situations, where urgency is not key, the matters are dealt with as normal. In all cases, the anonymity of the employee is protected at all times.

6. The law also requires that employees are given adequate prior training before they start their jobs and any additional training required to maintain their level of competency. Additional specific training requirements apply for employees working with significant hazards.

**Sources of evidence:**

There are provisions within the national legislation that govern the expected competency of workers in the mining industry (mining qualifications). These are very prescriptive (as an example they might specific that a worker requires a minimum of 10 years’ experience to perform a certain duty). Going forward, the plan is to make the industry play a more active role in defining the competency requirements, that is to say the industry should set the competencies required and be responsible for complying with them. In essence, there is a desire to move to a more goal-setting approach on the issues of worker training/competence.
17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: 
N/A. See earlier responses in Question 8.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

There are a number of guidance documents developed by the labour inspectorate which are available online at http://www.pip.gov.pl/html/en/html/07040000.htm. For the most part, they address issues related to Occ. H&S.

Some of the above were developed in concert with academic/research institutions.

In addition to the above, there are also documents that provide interpretations on the provisions within the law. These are emphasised as useful for guidance purposes only as they have no basis in law. These are available on www.wag.gov.pl.

Finally, discussions are held between the industry and the regulator to discuss review how the legislation works in practice. The learning’s from these are one of many inputs to the development of the interpretative guidance.

Sources of evidence:

V.24.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. Special Sources

Although the legislation (in this case the Labour Law) makes reference to some special sources of hazard (for example working at height, confined spaces i.e. high risk activities) and/or those which can lead to death and major injury, there is an obligation on the employer to identify all risks.

In mining plants onshore, natural hazards are a key concern. Blowouts, releases of toxic gas (H2S) and fires/explosions are also key.

In sum, no clear definitions are given and all risks are expected to be identified and addressed.

b. Yes. See previous responses.

Sources of evidence:
### 20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

**Response:**

**Offshore floating facilities (i.e. MODU’s):**

- **Transportation is covered by Maritime law (MARPOL, IMO, SOLAS and CODEX maritime).** The process including transportation, foundation and stability is not covered by the provisions by the Geological and Mining Law.

The moment when the exploration begins is the key-moment when the Geological and Mining Law is applied. Some specific regulations have been developed specifically for MODU’s by the Ministry of Transport, Construction and Maritime Economy which must be complied with.

The latest update to the maritime safety law (in 2011) treats MODU’s as vessels; hence they are required to comply with additional regulatory provisions. The law also addresses issues related to rescue and evacuation at sea. NB there are other organisations that also support in rescue activity, e.g. search and rescue service. Vessels and helicopters are available to aid this activity. There is also a special ship designated for use in the event of an oil spill.

**Boundaries:**

- A safety/exclusion zone of 1 nautical mile (~ 2 km) applies to offshore installations.
- The site boundary applies for onshore drilling sites.

Support vessels etc. will not typically fall under the mining law (mostly maritime law).

### 21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

**Response:**

**The entire lifecycle is covered (from beginning to end).**

The current set-up is jack-up platform couple to a buoy and FPSO (for offloading activities).

### 22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

**Response:**

Shale gas/shale oil is covered. See response to Question 23.
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

Covers all activities listed below:

  - Oil and Gas (including Unconventional gas)
  - Salt
  - Sulphur
  - Therapeutic and thermal waters and brines
  - Methane from seams

Underground gas storage:
- Underground storage of waste

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

The national legislation only applies when the personnel are on the facility.
- Diving activity is covered by separate legislation
- Transport to the facility via helicopter or vessel is not covered.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

The term employer is understood to mean the party that pays the employees’ wages. Where there is more than one employer, a principal employer must be designated. Nevertheless, there is joint responsibility between all employers.

The current situation offshore is that PetroBaltic are the licensee, operator and employer.

Note that the concession holder is the party with overall responsibility whether he/she is not the operator. The concession holder is the main actor in the event of mishaps.

In terms of responsibility at the individual level, the mining manager (equivalent to Offshore installation manager, OIM for an offshore facility and a site manager for an onshore plant) has overall responsibility for safe operation of the facility and all activities related to it. He/she can be fined in found to be negligent in fulfilling his legislative remit.

Sources of evidence:
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

Two key documents are required under the Polish regulatory regime that governs geological and mining activity, the “safety and health document” (which follows from Directive 92/91/EEC) and the “mining plant operation manual” (a requirement that developed from the Geological and Mining Law).

Prior to the directive, there were multiple documents that addressed individual specific areas relating to health and safety (for example, fire safety, working at height etc.). The safety and health document brings together in one place, the information presented in the individual documents.

The later mining plant operation plan is the key document. It has to be submitted and approved by the regulator. Furthermore, changes to the contents need to be ratified. On the other hand, the safety and health document has to be kept up to date but there is no requirement to submit it to the authorities.

Changes (including major changes) are defined as any modification’s that results in a change in working conditions. This is a very broad definition and as such can include both technical and organisational changes in so far as they results in a change in the prevailing working conditions. As noted, above, proposed changes need to be ratified with the authorities and both documents have to be updated but only the mining plant operation plan requires explicit approval.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:

N/A. Question targeted at the industry as opposed to the regulator.

Sources of evidence:
28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response: Yes. See response to Question 26.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

The rescue services/mining rescue team is an organisation that has been set up to respond to incidents i.e. provide emergency response services. In executing their duties they remain subject to authority of the mining manager of the pertinent facility who has to approve and coordinate their actions. In this regard, they are perceived to fall under the umbrella of the geological and mining legislation. NB This is not to say that they are covered by the geological and mining legislation.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

The legislation is not discriminatory in any way and seen to be neutral.

Health certificate are required for workers to ensure they can discharge their duties and not put themselves or others at risk.

Sources of evidence:
V.24.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

*Inspection activity is based on document review and site visits. Site inspections are risk-based. Facilities known to engender a higher level of risk are inspected more often than others. As a minimum, all facilities are inspected once a year.*

Furthermore, a yearly inspection plan is develop for each facility. Joint inspections are conducted by all the responsible ministries. The findings are consolidates and fed-back to the operator.

Where breaches are observed, on the spot fines can be given or operations terminated if though to present a high risk. Legal action against the operator can also be instigated.

Additional remarks:

The labour inspectorate is responsible for regulating the following areas in all industries:

- Employment.
- Working time (key focus).
- H&S in the workplace (Prevention/Occ. illness/accidents).

In addition to the above, the labour inspectorate also regulates shipping activity (ship registered by the Polish register of ships).

In the mining industry alone, an agreement exists between the mining authority and the labour inspectorate that responsibility for safety (predominantly major hazards) will lie with the former (i.e. the mining authority); other aspects remain under the purview of the labour inspectorate. The rationale for this is that all the regulations that apply in this sector are based on the geological and mining law. As a consequence, it is prudent that the ministry responsible for developing the regulations is also responsible for administering them. The mining authority has full responsibility for all documentation and approvals (except in situation where there is a direct and immediate risk of harm to the employee). The legislation in the other industries is based on the labour law (and the labour inspectorate has primacy in administering).

The labour inspectorate is responsible for Occ. illness and Occ. H&S issues/ incidents. This includes lighting, the use of hazardous substances, noise etc.

- The output of their work (i.e. measuring accident rates) directly influences the insurance premiums paid.
- By law, every employer has to evaluate the risks to personnel in the workplace (all risks, to all people).
- Personnel are required to have the specific training competences in work areas as well as demonstrate fitness to work offshore (via possession of a health certificate). Personnel that do have the required health clearance are forbidden to work on site.

Sources of evidence:
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:
The system as it currently stands works. It would be desirable if more inspections could be undertaken as the current level is somewhat limited.

NB Inspections activity in itself does not always reveal wrongdoing; sometimes they do, other times they don’t.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:
The manager of mining plant operation is responsible for the safety of all personnel on the mining facility.

Sources of evidence:

V.24.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
The legislation has a positive impact on H&S. On the whole, the legislation is very robust. The key issues lies in compliance.

The approaches used in Poland are discussed with contemporaries in other countries (e.g. Germany and the Czech republic) as well as industry representatives. The feedback gained is used to improve the process. Communication/discourse with other parties is key to improvement (i.e. sharing knowledge).

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
See response to Question 34.

Sources of evidence:
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response: No response given.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

   Response: No response given.

V.24.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

   Response:
   a. See response to Question 34.
   b. Yes. See response to Question 19.
   d. The polish legislation is quite specific and detailed; whilst the directive is broad and goal-setting. Hence, it is difficult to suggest how improvements to the directive can be made as issues identified that are specific to Poland might not have widespread applicability.
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
See responses to Question 38.

Sources of evidence:

The EU should develop initiatives that foster greater collaboration and engagement between regulators, industries and unions at the EU level. Also see response to Question 34.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
No changes proposed, hence no response given.

Sources of evidence:

V.24.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:
No real issues have been identified that related to the burden of the legislation.

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   
   b. How can the burden be minimised?
   
   c. Can existing systems cope with the extra requirements?

Response: 
N/A. See above response.

Sources of evidence:

**V.24.10 Future regulatory approach**

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: 
The use of a “Directive” approach is the official position of the Polish authorities. A regulation is perceived to increase the legislative burden and provide limited benefit. Furthermore, with a regulation, significant changes will need to be made to the existing national legislation.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: 
No response.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response: 
No response.

Sources of evidence:
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response: No response.  
Sources of evidence:

V.24.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response: No response.  
Sources of evidence:

V.24.12 Attached Information

No further information.
V.25. NOTES FROM INTERVIEW WITH:

Operator
LOTOS Petrobaltic S.A.

from
Poland
V.25.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>LOTOS Petrobaltic S.A.</th>
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<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Operator</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Poland</td>
</tr>
</tbody>
</table>

V.25.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

   Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

   Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Session started at Question 6.

   Sources of evidence:
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Session started at Question 6.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

Sources of evidence:

V.25.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.
b. How many exploration & development wells drilled annually, and expected trends?
c. How much oil & gas production annually, and expected trends?
d. Extent and plans for other “extraction through drilling activities”.

Response:

LOTOS Petrobaltic activity is offshore drilling on Baltic Sea with plans for shale gas expansion/participation (partner/operator).

On Baltic sea there is one exploration field (B3) and drilling activity field (B8) for further development and production launch.

Annually LPB produces c.a. 200.000 tonnes.

Plans: offshore drilling, onshore participation in conventional/unconventional hydrocarbons extraction.

Additional notes from the telecom:

- PetroBaltic is the only organisation currently active in the Polish sector of the Baltic Sea.
- They have been in operation since the 70’s.
- They operate two offshore facilities – one drilling platform and one production platform.
- Activity takes place in relatively shallow water depth (~ 100m).

Sources of evidence:

7. What is the balance of activity between offshore and onshore industries in your country?

a. Proportions of exploration & development wells drilled onshore and offshore.
b. Proportions of oil & gas production onshore and offshore.

Response:

Offshore exploration – 2 active fields, 7 concessions under analysis.

Sources of evidence:
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

LPB is a public sector company, a subsidiary for Grupa LOTOS S.A.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:

   a. no fatalities in LPB activities.
   b. no causes of death.
   c. no of injuries – 13 in the most recent year.
   d. ~400.

Additional notes from the telecom:

- Two fatalities have occurred due to helicopter related operations.
- There was a diving related fatality in 2007.

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

Unloading/loading and crane operations.
Man riding basket transfer accidents.
Falls from height.
Dropped objects.
Fire hazard works.
Works in well operations.
Manual handling operations/works with tools.

Sources of evidence:
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

**Response:**
There is no regulation and legal requirement (and possibility due to medical secrecy) to monitor and collect data of occupational illnesses.

**Sources of evidence:**

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**V.25.4 Regulatory approach**

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

**Response:**

- **a.** The directive has not been interpreted directly – some of the elements were introduced to mining regulations (Dz. U. 109 POZ 961) – safety, mining operations and special fire protection in mineral-extracting industries through drilling.
- **b.** The legislation is far more detailed (i.e. prescriptive) in terms of fire protection, handling of drilling works, documentation of drilling activities.
- **c.** Do not address a need for detailed major hazard report and hazard mitigation through levels of work activities.

**Sources of evidence:**

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13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

**Response:**
Stand-alone legislation with reference to appropriate national legislation or standards in specific requirements (environmental protection, trainings, marine qualifications).

**Sources of evidence:**
14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:

*Somewhere between – required documents (Safety documents) are not live documents and approved by competent authorities with offshore background and knowledge. Occupational safety is mostly required by general national requirements which often are excluding each other or specific requirements are missing.*

*Information is stated that something must be done but no relations to detailed regulations/requirements etc.*

*Some information are very general - should be done in a safe manner... should have appropriate training.*

*Directive 92/91/EEC is mostly focused on occupational safety.*

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:

*No response.*

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

*No, there is no relation to safety culture in any of documents the general statement is that workforce or work representatives should participate in approving safety standards, requirements of PPE in company, hazardous works, improvement plans etc.*

Additional notes from the telecom:

Employee organisations

- Under the labour law, organisations with more than 250 employees must have an H&S committee.
- The committee meets four times a year.
- The marine regulations also require monthly meetings to be held.

Worker representatives

- The employees also have an “employee representative” that represents the workforce on all matters (not just safety).
- The employee is elected/chosen by the trade unions.
- The employee representatives have SWA although they are obliged to inform management of any issues.
- There are no specific legislative driven training requirements for the safety reps.
- There are also safety offices appointed internally by PetroBaltic.

Training requirements

- The national legislations require that all personnel are adequately trained to execute their jobs. This is irrespective of whether they are company personnel or
sub-contractors.

- There are legislative requirements that workers should undergo offshore survival training. However, PetroBaltic provides training for everyone that sends more than 3 days on board its floating installation.

### Safety Culture

- In general, safety culture is driven by internal organisational process as opposed to the regulatory regime.
- There are anonymous reporting systems (internal). These do not get reported to the regulator.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

**Response:**

In exploration sector due to marine activities it is mandatory to have management system implemented (ISM Code) and ISO standards related to corporate requirements in LOTOS.

In private sector (contractors) it is difficult to require a management system implemented due to lack of national requirements and if we want to require any of management systems implemented there are hardly any contractors left to cooperate.

**Sources of evidence:**

18. What non-legislative guidance is used / available in your country?

- What non-legislative guidance is available (if any)?
- To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
- By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

**Response:**

Polish Standards only. There are no specific national mining guidelines, requirements and good practices for offshore drilling activities (like IDCA, OGP, Health Safety Executive, API).

Such information are available regarding marine regulations and requirements (ex. IMO)

Additional notes from the telecom.

- Most guidance documents available are those developed internally by PetroBaltic.
- There are some national standards available, but these have gaps.

**Sources of evidence:**

### V.25.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

- What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
- What does the relevant legislation interpret “normal” and “critical” to mean?
<table>
<thead>
<tr>
<th>Response</th>
<th>Sources of evidence</th>
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<tbody>
<tr>
<td><strong>20.</strong> What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?</td>
<td><strong>Additional notes from the telecom:</strong>&lt;br&gt;• The scope of application offshore is loosely defined and there are no clearly defined boundaries. Currently, the production facility is set up as platform connected to an offloading buoy and the risks associated with the entire system are addressed within the Safety and Health Document. In this context, the scope can be understood to cover the platform itself and any equipment directly connected to it.</td>
</tr>
<tr>
<td><strong>21.</strong> What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?</td>
<td><strong>No response.</strong></td>
</tr>
<tr>
<td><strong>22.</strong> What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?</td>
<td><strong>No response.</strong></td>
</tr>
<tr>
<td><strong>23.</strong> Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?</td>
<td><strong>No response.</strong></td>
</tr>
<tr>
<td><strong>24.</strong> How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?</td>
<td><strong>No response.</strong></td>
</tr>
</tbody>
</table>
25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Employer is defined as a person / company responsible for employed personnel. All sub-contractors and network in the industry have their own employers and all issues are set between employer’s levels.</td>
<td></td>
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</table>

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Additional notes from the telecom:</td>
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<tr>
<td>What constitutes a major change is clearly defined within the Polish national legislation. Broadly speaking, it includes any change that influences the mining activity. As a general rule:</td>
<td></td>
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<tr>
<td>• Approval from the authority is required.</td>
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<tr>
<td>• In some cases, a full re-submission of the H&amp;S document is required; in others the authorities just require formal notification. Organisational/structural changes are good examples of the latter.</td>
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</table>

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

<table>
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<tr>
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<tbody>
<tr>
<td>Additional notes from the telecom:</td>
<td></td>
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<tr>
<td>It is not mandatory to have management system implemented in mining industry however due to marine activity and diving operations LOTSO Petrobaltic have implemented ISM Code and ISO 14001 and PN 18001 (based on OSHAS). All standards are written in procedures and archived due to standard requirement.</td>
<td></td>
</tr>
<tr>
<td>• There are no verification requirements within the National legislation.</td>
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</tr>
<tr>
<td>• Procedural mechanisms such as Permit to work and JSA’s are also used to manage risk.</td>
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</tbody>
</table>
28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
S&H document is prepared and send for approval for mining authorities. It is not a subject of periodical quality control only internally due to implemented systems (document review every year).

Additional notes from the telecom:
- The safety and health document place more emphasis on Occ. H&S issues as opposed to technical safety issues.
- In addition to the Safety and Heath document, specific documents relating to particular activities have to be developed (i.e. how a certain activity will be approached). For example, a drilling plan is required for all drilling related activity (progress reports are also required over the execution of the activity). These documents also require approval from the regulator.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
No response.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
No response.

Sources of evidence:

V.25.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

Additional notes from the telecom:
There are two key items of legislations that govern offshore related drilling activity (for both fixed and mobile platforms), the mining law and maritime law. The former is administered by the Mining Authority; whilst responsibility for the later rests with the PRL. The PRL certify and issue certificates related to technical/safety issues on the facility. Inspections are undertaken by both authorities. Inspections by the maritime authority tend to be more frequent than those from the mining authority and cover hardware, infrastructure and technical elements. Inspections by the mining authority are generally restricted to documentary review. All inspections are announced and arranged in advance. LOTOS PetroBaltic also undertake internal (i.e. self-assessment) and independent reviews (by third parties, for example classification societies). The system in Poland is quite different to other countries (e.g. Norway) for which there are

Sources of evidence:
a single dedicated regulator that addresses all issues. In general, the standards required by the North sea countries are much more stringent than those required by Polish legislation. To raise standards of safety, we strive to implement the more stringent standards. In some case, this has been met with opposition by management as such provisions are not required by Polish law.

NB Under the national legislation, diving operations are the only activities for which a SMS is exclusively required. An SMS is not required for other activities. Sub-contractors are not required to have an SMS by law. See also response to Question 27.

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response: No response.

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response: No response.

V.25.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response: No response.

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response: No response.
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: No response.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

Additional notes from the telecom:
- The use of FPSO’s as offshore facilities are not currently covered by the national legislative framework. They do fit easily into the standard description of an offshore installation and are hence considered to be “artificial islands”.
- Current best practice is driven by the organisations (i.e. PetroBaltic) as opposed to the regime. A possible reason for this is the fact that we are the only organisation involved and the scale of activity is quite limited – two factors that do not suggest a huge regulatory emphasis.

Sources of evidence:

V.25.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response: No response.

Sources of evidence:
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

   
   Response:

   Additional notes from the telecom:
   Directive 92/91/EEC places more emphasis on Occ. H&S issues as opposed to process/technical safety issues. More weight should be given to process safety hazards.
   Furthermore, the absence of interpretive guidance can be an issue. This give rise to the issue of “knowing what to do” but not “how to do”. As a result, more guidance is required on how to comply with the provisions. This is best administered by a central authority (for e.g. an EU focussed regulatory body).
   Also, the scope of hazards covered by the directives should be made clearer.
   With regards to the new offshore regulation.
   The safety elements are welcome. However, the liability provisions can act as barriers to entry for smaller players.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response:
   No response.

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: No response.

Sources of evidence:

V.25.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: Additional notes from the telecom.
Key preference is a Directive supported by guidelines.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: No response.

Sources of evidence:
45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:
No response.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:
No response.

Sources of evidence:

V.25.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:
No response.

Sources of evidence:

V.25.12 Attached Information

No further information
V.26. NOTES FROM INTERVIEW WITH:

Operator
Talisman

from

Poland
V.26.1 Demographic Questions

Organisation:
1) Marcin Koba, HSE Manager, Production and Well Services Department, PGNiG
2) Tadeusz Zając, Dyrektor, Biuro BHP i Współpracy z Przedstawicielami Pracownikow, PGNiG
4) Przemysław Steperski, HSE & ISO Manager at Oil and Gas Exploration co (Jasło) (a subsidiary of PGNiG)

Stakeholder type: Operator

EU/EEA country/counties in which your organisation operates: Poland

V.26.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response:
N/A. Session started at Question 6.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response:
N/A. Session started at Question 6.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response:
N/A. Session started at Question 6.
4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Session started at Question 6.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

Sources of evidence:

V.26.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: 

**PGNiG**

PGNiG is involved in the following activities in Poland: General Drilling (local and international); underground gas storage; Mining; Oil and Gas exploration and production.

In 2011, PGNiG drilled 28 exploration wells, 5 production wells and 1 well for gas storage. All wells were drilled onshore.

*Volume of Oil and Gas produced in Poland (based on the statistics for 2011):*
- 455,000 tonnes of oil
- 4.3 billion m³ of gas

*Volume of Oil and Gas produced in Poland (based on the predicted statistics for 2012):*
- 482,000 tonnes of oil
- 4.4 billion m³ of gas

An increase in drilling activity related to unconventional gas is expected in the future.

**Talisman**

Involved in exploration drilling activity, all onshore. Currently involved in drilling a series of three consecutive vertical exploration wells. Oil and Gas Exploration Company NAFTA (a subsidiary of PGNiG) is the drilling contractor conducting the drilling activity for Talisman.
7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

**Response:**

*Offshore Oil and Gas activity on the whole is limited. It is understood that there is only a single production unit offshore and it is owned and operated by LotosPetroBaltic.*

*The activities highlighted in the response to Question 6 are all onshore.*

*In sum, most activity is onshore. The bulk of the onshore activity (95%) is executed by PGNiG; the outstanding 5% by other players.*

**Sources of evidence:**

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

**Response:**

*All private sector, although the state is a majority shareholder in some enterprises (e.g. PGNiG).*

*Talisman owns in Poland a number of concessions that relate primarily to unconventional gas. 107 licenses were issued altogether in the latest licensing round thus heralding a marked increase in drilling activity in the coming years.*

**Sources of evidence:**

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

**Response:**

*PGNiG*

*Two fatalities have occurred in the last 10 years – one in 2008 and the other in 2010. The former was a result of working at height (a fall); the latter involved a high pressure hose.*

*There was a blowout that ignited around 2002/2003. This occurred whilst drilling in a gas storage facility. There no fatalities.*

*PGNiG HSE statistics:*

- **11,000 employees**
- **78 LTI’s occurred in 2011. Thirteen of these were related to operational issues on the rig(s); the others were office based incidents.**
- **There were 83 injuries overall.**

*Additional notes:*

- *The construction industry is understood to have a worse accident rate compared to the oil and gas industry, according to official statistics.*
- *Some reduction in the accident rates within the industry has been achieved in*...
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

*Local incidents (of the kind described in Question 9) have acted as drivers for regulatory change.*

In the past, blowouts were more frequent (~1 every 7 years. The problem was more to do with weak compliance on the part of industry as opposed to inadequate legislation. Changes in the law in 1989 (to create equality amongst industry players - public or private), the growth of the private sector and court judgements following infractions helped to improve the situation.

*The influx of international organisations to the Polish Oil and Gas industry is also helping to improve practices/drive change (as they work to higher international standards). A key reason for the improvement is the fact they adopt a risk-based/system wide approach. This in contrast with the polish legislation which is perceived as working at the individual level. Directive 92/91/EEC is perceived to focus primarily on Oc. H&S issues as opposed to process safety. This is a key weakness in the directive.*

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response:

*Hearing loss is the predominant occupational illness of concern.*

*Last year, no instances of occupational illness were reported.*

*Some concerns have also been raised with respect to vibration levels associated with legacy equipment that does not have anti-vibration controls.*

Sources of evidence:

V.26.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

*The provisions within Directive 92/91/EEC are dispensed with the Polish national legislation.*

*Polish law is more detailed and prescriptive in comparison to the Directive. It prescribes in*
Gaps in the directive:

Onshore
- The Polish law has provisions for separation of wells from the populated areas based on the associated hazards e.g. H2S, blowouts etc. The directive does not include such provisions. Basically, the directive does not address risks to the public but focuses only on the workers.

Offshore
- Polish law defines the separation distance required between facilities.

Organisation of Polish law.

Broadly speaking, there are two key elements of Polish law that apply in the Oil and Gas industry:
1. General H&S law (under labour law) - applies to all industries/persons.
2. Geological and mining law - for the drilling/mining industry only

Other legislation (e.g. environmental law) also has application in the Oil and Gas industry.

Two key documents are required under the Polish regulatory regime that governs geological and mining activity, the “safety document” (which follows from Directive 92/91/EEC) and the “mining plant operation manual” (a requirement that developed from the national legislation). There is some degree of overlap in what is covered by both documents.

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:
See response to Question 12.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
Both types of hazards are equally covered.

To an extent, there is problem with overlaps as similar provisions can exist across multiple legislative instruments. This can create problems when determining whether breaches have occurred (in the aftermath of an incident).

There is a distinct lack of guidance available to ensure proper interpretation (and thus application) of the regulations. This challenge is currently being addressed by the regulator.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
Polish legislation is predominantly prescriptive. Full compliance is required with the

Sources of evidence:
legislation as outlined. Submissions have to in a consistent and in the format required by the regulator.

At the current time, development/improvement to the legislations is following this route i.e. they are evolving along prescriptive principles. A tension thus exists between the industry who are moving towards a more process risk oriented and goal-based approach (not there yet) and the Polish regulations which are prescriptive. For example, PGNiG is in the process of developing its company standards to match the requirements outlined in the Polish regulations.

On liability/fines for breaches:

- Fines related to breaches of H&S legislation are much lower than those related to environmental infractions. In the former case, the fines are either so low or non-existent; whilst in the latter case the fines are of a magnitude significant enough to represent an existential threat to the organisation (i.e. lead to bankruptcy).

Additional remarks:

- In Poland more emphasis is placed on preventive measures i.e. prevention is key
- The inspectors have levels of technical expertise. However, they are less robust when it comes to legislative issues.
- The positive experience of British labour inspectorate in using “check lists” for inspections activity has been implemented into Polish law.
- Polish unions (i.e. workforce representatives) place more emphasis on work related issues (for e.g. worker rights) as opposed to safety matters.

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

The following remarks were made:

- The regulator emphasises that core responsibility for safety for all persons on the site rests with the primary contractor i.e. the site operator. This can have the positive effect of ensuring that sub-contractors meet the standards outlined by the site operator. The legislation addresses the duty of preparing documents (understood as agreements) between parties on-site to set primacy and respect the mutually agreed safety regulations.
- The law regarding “public contracts” often acts as a barrier to developing good H&S.
- Public contracts have to be selected on price. Poor HSE record of an organisation is not seen as a proper basis upon which a contract can be lost or not accepted. In other words, commercial/cost imperatives take primacy. All contracts will always stipulate that the HSE provisions will be met, although it is clear from the price quoted that that is an unattainable goal. In the case of PGNiG (which is 50% owned and thus in a sense “public”), the legal department do not allow H&S provisions to be stipulated within contracts due to the potential legal challenges that may follow.
- Individuals are afraid of reprisals that may follow if reports are made to the authorities on safety related issues as they are not confident such reports will remain confidential and that their anonymity will be preserved.
- Training requirements are stipulated by the authorities in the regulations. For example, all employees are expected to be trained annually on a specific issue. As

Sources of evidence:
the regulations are prescriptive, these provisions must be complied with.

- The authorities are currently championing/promoting various HSE/culture initiatives with the aim of improving the safety culture within the industry as a whole.
- The law requires that employees are informed of the risks they are exposed to in their work. Tools such as JSA’s (Job safe Analysis) are one way of achieving this. However, the workers do not have recourse to comment/take place in their development.
- On the whole, awareness of safety related issues is on the rise in the industry. There is now a dedicated HSE person (appointed by the company) on each rig to address safety related issues. The practice is that the person is positioned as tool pusher assistant; however it may develop in a separate position. The workforce also has the right to elect a worker representative to address all work related issues. However, the primary focus of this representative tends to be on general work related issues such as working time; remuneration and not safety per se. (Also see response at bottom of Question 15.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: 
No response. 

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: 
See response given in Question 14.

On the whole the authorities are going in the right direction in trying to develop more guidelines. However, this activity needs to be accelerated. More recently, some guidance has been developed to aid foreign operators to better understand their incident reporting obligations under the law.

With regards to industry forums:

- There are no cross-industry safety driven initiatives in Poland, but there are trade associations (who focus on commercial issues) and the OPPPW (which at present focuses on environmental issues). There are also others that discuss issues of a technical nature.
- A number of discussions are held between the industry (largely PGNiG) and the regulator. In recent times, a consultation has been arranged do discuss the proposed offshore regulation.
- In some cases, there is some engagement with the unions, but this tends to be too “high level”.

Sources of evidence:
V.26.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:
   a. Under the labour law there is a general requirement to identify and assess all risks. The mining law makes specific references to certain risks (e.g. releases of H2S and blowouts). Hence these can be considered as special sources of hazard. For these hazards, the employer has to determine what measures are required and ensure they are in place.

   b. See previous responses.

   c. No response.

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:
   For onshore facilities, the site boundary represents the extent of where the legislation applies (taking into account the risks to the public)
   Offshore – N/A. Consults LotosPetroBaltic or the Regulator.

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:
   No response.
22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

There is currently one that governs all mineral extraction activity in Poland - the geological and mining law. This governs both conventional and unconventional oil and gas extraction, salt, sulphur, geothermal, gas storage, CCS (the regulations cover waste associated with mineral extraction and carbon is considered to be waste and is this covered).

The update of existing regulations, based on the new geological and mining law, especially regarding well mining activities addresses unconventional gas exploration and extraction processes and techniques, supporting planning, controlling and documenting of such activities.

There are special sections within the law which address each activity.

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

See response to Question 22.

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

The workplace is defined as the area within the site-boundary. Inside a car is also considered to the workplace provided it is being used for work related purposes.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

Onshore.

During exploratory drilling, responsibility is delegated to the drilling contractor who then assumes the “employer” role and is thus responsible both in a legal sense and for safety of the sense.

For a production site, the operator of the site is the “employer” (who is legally responsible).

NB Under the regulations, the employer is responsible for everyone on the site.

Sources of evidence:
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:
Any undertaking that results in a change in the working conditions (e.g. a new building, construction work etc.) will require the safety and health document to be updated. Under this definition, organisational changes will trigger an update. Where equipment is replaced like-for-like but operated differently will also be considered as a change.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
No legal requirement to have a certified quality management system, but organisations has them. These are used to ensure the quality of any work undertaken.

All verification work is done internally; there are no external verification requirements.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
The "mining plant operation manual is submitted to the regulator for review and approval BUT not the safety and health document. Approvals are also required for major changes.

During audits, the inspectors check the safety and health document, the maintenance and drill records.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
The mining manager is legally responsible for the site, especially in emergency situations.
He/she has responsibility to coordinate and arrange all activity on the site.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
The law does not discriminate and it provides adequate provisions for gender equality and handicapped workers. Furthermore, health checks are required for workers.

Sources of evidence:
V.26.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

All wells being drilled are inspected by the mining authority. For exploratory drilling, inspections take place at least once per well drilling process - the exact rate depends on the level of activity. For production activities, inspections are quite frequent – several times a year.

Inspections conducted by the mining authority tend to be announced (via a letter) and have determined scope. The labour inspectorate on the other hand prefers unannounced inspections (2-3 times a year). Further inspections are conducted to look at hygiene related issues (every couple of years).

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

The oversight from the mining authority helps to maintain safety BUT the regulatory regime does not drive improvement but rather just ensures compliance. Company reputation appears to be the key driver for safety.

The industry complies with all the regulations and hence has all the required permits but this does not improve the culture.

Furthermore, there is an absence of a systematic approach to risk management with regards to H&S in Poland. Such an approach is used by the operators and this is seen as helping to improve safety.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

The operator is responsible as long as the regulator adheres to all that is required of him/her (i.e. complies fully with the site H&S policy etc.).

Sources of evidence:

V.26.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

See response to Question 32.

Company reputation/ personal responsibility are seen to be key driver. If there were no regulations in place, organisations will still ensure that safety levels remain at their optimum.

The existing regulations are adequate and cover all aspects including shale gas. Any new regulations (especially on Shale gas) will be detrimental to safety.

Sources of evidence:
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response: 
No response.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

b. Varies. From 5 to 8. The level of health and safety are improving all the time. The concept of the safety and health is very useful; the practical implementation can be improved. Significant improvements can also be achieved if the government adopted a less-prescriptive approach. There is still a great need to promote planning and communication of safety measures to be undertaken. It mostly applies to re-forming the safety culture.

The government should also undertake additional initiatives/create more incentives to improve safety.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

No response.

Sources of evidence:
V.26.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
The directive had a positive influence on the national legislation. It should be updated to reflect latest thinking/approaches to regulation of safety. The applicability of the directive to new technologies should be assessed.

The roles and responsibilities of the various parties should be clarified and more clearly defined. Not in favour of the current practice in exploration drilling that allows delegation of responsibility from the operator to the drilling contractor.

A system in which a single management system is in place for all activities is advocated as this will reduce the burden on SME’s as they do not need to develop their own. This is the current practice in the polish construction industry.

The current system within Poland is theoretical/paper based. The risk assessments done need to be used to inform day-to-day activities i.e. move from theory to practice. Furthermore, the results of the risk assessments need to be communicated to the workforce. Also, too much legislative provisions are difficult to follow. The regulations need to be less prescriptive and more goal–oriented.

Also see previous responses.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
Suggested improvements to the Directive:
- It should be developed to focus more on the process (as well as the workplace).
- Greater emphasis should be placed on the need for improved communication between the workforce and the management.
- The scope should be broadened to include analysis of the risks to the public, transport and the environment, as well as process planning. Also position of
bridging / interface documents can be strengthened, as they are widely used by the industry.

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response: No response.

Sources of evidence:

V.26.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: The burden is acceptable as it is seen as helping to deliver safety.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: See response to Question 41.

Sources of evidence:
V.26.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry-specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a "regulation" or a "directive" to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: A directive approach is the preferred option as they allow for easy integrations of with the local legislation/culture.
Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response: 
See response to Question 43. It is hard to develop a regulation that will meet the needs of all environments/countries. A directive achieves this goal.
Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response: 
No response.
Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

Response: 
See previous responses.
Sources of evidence:
**V.26.11 Other issues**

47. Please add any other comments that you consider relevant to the objectives of the study.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><em>Changes are required to the Directive but these are not significant changes. The comments raised in the previous responses are areas within it can be improved.</em></td>
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<tr>
<td><em>More emphasis should be placed on process safety.</em></td>
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**V.26.12 Attached Information**

No further information
V.27. NOTES FROM INTERVIEW WITH:

Operator
PGNIG

from

Poland
V.27.1 Demographic Questions

Organisation:

1) Marcin Koba, HSE Manager, Production and Well Services Department, PGNiG
2) Tadeusz Zając, Dyrektor, Biuro BHP i Wspolpracy z Przedstawicielami Pracownikow, PGNiG
4) Przemysław Steperski, HSE & ISO Manager at Oil and Gas Exploration co (Jasło) (a subsidiary of PGNiG)
5) Dariusz Słodki – OH&S Manager

Stakeholder type:
(e.g. Government/Regulator, Trade association/Operator, Union, NGO)

Operator

EU/EEA country/counties in which your organisation operates:

Poland

V.27.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Session started at Question 6.

   Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Session started at Question 6.

   Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.
Response: N/A. Session started at Question 6.

Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Session started at Question 6.

Sources of evidence:

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Session started at Question 6.

Sources of evidence:

V.27.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: PGNiG

PGNiG is involved in the following activities in Poland: General Drilling (local and international); underground gas storage; Mining; Oil and Gas exploration and production.

In 2011, PGNiG drilled 28 exploration wells, 5 production wells and 1 well for gas storage. All wells were drilled onshore.

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An increase in drilling activity related to unconventional gas is expected in the future.

Talisman:

Involved in exploration drilling activity, all onshore. Currently involved in drilling a number of wells. NB NAFTA (a subsidiary of PGNiG) is one of the drilling contractors conducting the drilling activity for Talisman.

Sources of evidence:
7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response:

Offshore Oil and Gas activity on the whole is limited. It is understood that there is only one single production unit offshore and it is owned and operated by Lotos PetroBaltic.

The activities highlighted in the response to Question 6 are all onshore.

In sum, most activity is onshore. The bulk of the onshore activity (95%) is executed by PGNiG; the outstanding 5% by other players.

Sources of evidence:

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

All private sector, although the state is a majority shareholder in some enterprises (e.g. PGNiG).

Talisman own a number of concessions that relate primarily to unconventional gas. 107 licenses were issued in the latest licensing round thus heralding a marked increase in drilling activity in the coming years.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:

PGNiG

Two fatalities have occurred in the last 10 years – one in 2008 and the other in 2010. The former was a result of working at height (a fall); the latter involved a high pressure hose.

There was a blowout that ignited around 2002/2003. This occurred whilst drilling in a gas storage facility. There no fatalities.

PGNiG HSE statistics:

- 11,000 employees
- 78 LTI’s occurred in 2011. Thirteen of these were related to operational issues on the rig(s); the others were office based incidents.
- There were 83 injuries overall.

Additional notes:

- The construction industry is understood to have a worse accident rate compared to the oil and gas industry, according to official statistics.
- Some reduction in the accident rates within the industry has been achieved in

Sources of evidence:
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

*Local incidents (of the kind described in question 9) have acted as drivers for regulatory change.*

*In the past, blowouts were more frequent (~ 1 every 7 years. The problem was more to do with weak compliance on the part of industry as opposed to inadequate legislation. Changes in the law in 1989 (to create equality amongst industry players - public or private), the growth of the private sector and court judgements following infractions helped to improve the situation.*

*The influx of international organisations to the Polish Oil and Gas industry is also helping to improve practices/drive change (as they work to higher international standards). A key reason for the improvement is the fact they adopt a risk-based/system wide approach. This in contrast with the polish legislation which is perceived as working at the individual level.*

*Directive 92/91/EEC is perceived to focus primarily on Oc. H&S issues as opposed to process safety. This is a key weakness in the directive.*

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

| a. Number of occupational illnesses in the most recent year. |
| b. Key types of illnesses. |
| c. Please provide data sources (if available). |

Response:

*Hearing loss is the predominant occupational illness of concern.*

*Last year, no instances of occupational illness were reported.*

*Some concerns have also been raised with respect to vibration levels associated with legacy equipment that do not have anti-vibration controls.*

*Vibration problem is related to the fact that used equipment was old, now it is controlled by vibration level tests that are conducted regularly on every a job position that is exposed to the risk of vibrations.*

V.27.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

| a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?). |
| b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive? |
| c. What (if any) aspects of safety and health do they address that are not addressed by the directive? |
Response:

The provisions within Directive 92/91/EEC are dispersed with the Polish national legislation.

Polish law is more detailed and prescriptive in comparison to the Directive. It prescribes in great detail what has to be complied with.

Gaps in the directive:

Onshore

- The Polish law has provisions for separation of wells from the populated areas based on the associated hazards e.g. H2S, blowouts etc. The directive does not include such provisions. Basically, the directive does not address risks to the public but focuses only on the workers.

Polish law is very detailed. It is better to oblige operator to provide SAFE separation (based on the case/project) from the populated areas than to give an exact distance (i.e. 100m) in the directive.

Offshore

- Polish law defines the separation distance required between facilities.

Organisation of Polish law

Broadly speaking, there are two key elements of Polish law that apply in the Oil and Gas industry:

1. General H&S law (under labour law) - applies to all industries/persons.
2. Geological and mining law - for the drilling/mining industry only

Other legislation (e.g. environmental law) also have application in the Oil and Gas industry.

Two key documents are required under the polish regulatory regime that governs geological and mining activity, the “safety health document” (which follows from Directive 92/91/EEC) and the “mining plant operation manual” (a requirement that developed from the national legislation). There is some degree of overlap in what is covered by both documents.

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:

See response to Question 12.

Sources of evidence:

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:

Both types of hazards are equally covered.

To an extent, there is problem with overlaps as similar provisions can exist across multiple legislative instruments. This can create problems when determining whether breaches have occurred (in the aftermath of an incident).

There is a distinct lack of guidance available to ensure proper interpretation (and thus
15. Explain the extent that the legislation in your country uses goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

**Response:**

Polish legislation is predominantly prescriptive. Full compliance is required with the legislation as outlined. Submissions have to be in a consistent and in the format required by the regulator.

At the current time, development/improvement to the legislations are following this route i.e. they are evolving along prescriptive principles. A tension thus exists between the industry who are moving towards a more goal-based approach (not there yet) and the Polish regulations which are prescriptive. For example, PGNiG is in the process of developing its company standards to match the requirements outlined in the Polish regulations.

**On liability/fines for breaches:**

- Fines related to breaches of H&S legislation are much lower than those related to environmental infractions. In the former case, the fines are either so low or non-existent; whilst in the latter case the fines are of a magnitude significant enough to represent an existential threat to the organisation (i.e. lead to bankruptcy).

**Additional remarks:**

- In Poland more emphasis is placed on preventive measures i.e. prevention is key.
- The inspectors have levels of technical expertise. However, they are less robust when it comes to legislative issues.
- The positive experience of British labour inspectorate in using “check lists” for inspections activity has been implemented into Polish law.
- Polish unions (i.e. workforce representatives) place more emphasis on work related issues (for e.g. worker rights) as opposed to safety matters.

**Sources of evidence:**

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

**Response:**

The following remarks were made:

- The regulator emphasises that core responsibly for safety for all persons on the site rests with the primary contractor i.e. the site operator. This can have the positive effect of ensuring that sub-contractors meet the standards outlined by the site operator.
- The law regarding “public contracts” often acts as a barrier to developing good H&S.
- Public contracts have to be selected on price. Poor HSE record of an organisation is not seen as a proper basis upon which a contract can be lost or not accepted. In other words, commercial/cost imperatives take primacy. All contracts will always stipulate that the HSE provisions will be met, although it is clear from the price quoted that that is an unattainable goal. In the case of PGNiG (which is more than 50% (I think exactly 51%) is owned by Polish Government) owned and thus in a sense “public”), the legal department do not allow H&S provisions to be

**Sources of evidence:**
stipulated within contracts due to the potential legal challenges that may follow.

- Individuals are afraid of reprisals that may follow if reports are made to the authorities on safety related issues as they are not confident such reports will remain confidential and that their anonymity will be preserved.

- Training requirements are stipulated by the authorities in the regulations. For example, all employees are expected to be trained annually on a specific issue. As the regulations are prescriptive, these provisions must be complied with.

- The authorities are currently championing/promoting various HSE/culture initiatives with the aim of improving the safety culture within the industry as a whole.

- The law requires that employees are informed of the risks they are exposed to in their work. Tools such as JSA’s (Job safe Analysis) are one way of achieving this. However, the workers do not have recourse to comment/take place in their development.

- On the whole, awareness of safety related issues is on the rise in the industry. There is now a dedicated HSE person (appointed by the company – it is not required by Polish law, it is PGNiG’s good practice and good will to ensure safe working environment) on each rig to address safety related issues. The workforce also has the right to elect a worker representative to address all work related issues. However, the primary focus of this representative tends to be on general work related issues such as working time; remuneration and not safety per se. (Also see response at bottom of Question 15.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:
No response.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:
See response given in Question 14.

On the whole the authorities are going in the right direction in trying to develop more guidelines. However, this activity needs to be accelerated. More recently, some guidance has been developed to aid foreign operators to better understand their incident reporting obligations under the law.

With regards to industry forums:

- There are no cross-industry safety driven initiatives in Poland, but there are trade associations (who focus on commercial issues) and the OPPW (which focuses on environmental issues). There are also others that discuss issues of a technical nature.

- A number of discussions are held between the industry (largely PGNiG) and the
regulator. In recent times, a consultation has been arranged to discuss the proposed offshore regulation.

• In some cases, there is some engagement with the unions, but this tends to be too “high level”.

V.27.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. Under the labour law there is a general requirement to identify and assess all risks. The mining law makes specific references to certain risks (e.g. releases of H2S and blowouts). Hence these can be considered as special sources of hazard. For these hazards, the employer has to determine what measures are required and ensure they are in place.

b. See previous responses.

c. No response.

Sources of evidence:

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

For onshore facilities, the site boundary represents the extent of where the legislation applies (taking into account the risks to the public).

Offshore – N/A. Consults Lotos PetroBaltic or the Regulator.

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

No response.

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

There is currently one that governs all mineral extraction activity in Poland- the geological and mining law. This governs both conventional and unconventional oil and gas extraction, salt, sulphur, geothermal, gas storage, CCS (the regulations cover waste associated with mineral extraction and carbon is considered to be waste and is this covered).

Sources of evidence:
23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response: 
See response to Question 22.

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response: 
The workplace is defined as the area within the site-boundary. Inside a car is also considered to the workplace provided it is being used for work related purposes.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response: 
Onshore
During exploratory drilling, responsibility is delegated to the drilling contractor who then assumes the “employer” role and is thus responsible both in a legal sense and for safety of the sense.

It is more complicated because under Polish Labour Law every employer is responsible for his employees and but under Polish Mining Law – Mining Plant Operation Manager certified by Polish Mining Authorities is responsible for employees working within Mining Plant (Mining Plant includes drilling site).

Responsibility is delegated to the drilling contractor but operator is still hold responsible.

For a production site, the operator of the site is the “employer” (who is legally responsible).

NB Under the regulations, the employer is responsible for everyone on the site.

Sources of evidence:

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response: 
Any undertaking that results in a change in the working conditions (e.g. a new building, construction work etc.) will require the safety and health document to be updated. Under this definition, organisational changes will trigger an update. Where equipment is replaced like-for-like but operated differently will also be considered as a change.

Sources of evidence:
### V.27.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

**Response:**

All wells being drilled are inspected by the mining authority. For exploratory drilling, inspections take place at least once a week - the exact rate depends on the level of activity. For production activities, inspections are quite frequent – several times a year.

Inspections conducted by the mining authority tend to be announced (via a letter). The labour inspectorate on the other hand prefers unannounced inspections (2-3 times a year). Further inspections are conducted to look at hygiene related issues (every couple of years).

**Sources of evidence:**
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

*The oversight from the mining authority helps to maintain safety BUT the regulatory regime does not drive improvement but rather just ensures compliance. Company reputation appears to be the key driver for safety.*

*The industry complies with all the regulations and hence has all the required permits but this does not improve the culture.*

*Furthermore, there is an absence of a systematic approach to risk management with regards to H&S in Poland. Such an approach is used by the operators and this is seen as helping to improve safety.*

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

*The operator is responsible as long as the regulator adheres to all that is required of him/her (i.e. complies fully with the site H&S policy etc.)*

Sources of evidence:

**V.27.7 Effectiveness**

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:

*See response to Question 32.*

*Company reputation/ personal responsibility are seen to be key driver. If there were no regulations in place, organisations will still ensure that safety levels remain at their optimum.*

*The existing regulations are adequate and cover all aspects including shale gas. Any new regulations (especially on Shale gas) will be detrimental to safety.*

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

   b. What (if any) objective measures are available to show its effectiveness?

   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:

*No response.*

Sources of evidence:
36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

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<tr>
<td>b. Varies. From 5 to 8. The level of health and safety are improving all the time. The concept of the safety and health is very useful; the practical implementation can be improved. Significant improvements can also be achieved if the government adopted a less-prescriptive approach. The government should also undertake additional initiatives/create more incentives to improve safety.</td>
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37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

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V.27.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:

The directive had a positive influence on the national legislation. It should be updated to reflect latest thinking/approaches to regulation of safety. The applicability of the directive to new technologies should be assessed.

The roles and responsibilities of the various parties should be clarified and more clearly defined. Not in favour of the current practice in exploration drilling that allows delegation of responsibility from the operator to the drilling contractor.

A system in which a single management system is in place for all activities is advocated as this will reduce the burden on SME’s as they do not need to develop their own. This is the current practice in the polish construction industry.

The current system within Poland is theoretical/paper based. The risk assessments done need to be used to inform day-to-day activities i.e. move from theory to practice. Furthermore, the results of the risk assessments need to be communicated to the workforce. Also, too much legislative provisions are difficult to follow. The regulations need to be less prescriptive and more goal-oriented.

Also see previous responses.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:

Suggested improvements to the Directive:

- It should be developed to focus more on the process (as well as the workplace).
- Greater emphasis should be placed on the need for improved communication between the workforce and the management.
- The scope should be broadened to include risks to the public, transport and the environment.

Sources of evidence:
40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

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<th>Response:</th>
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<td>No response.</td>
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V.27.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

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<tr>
<td>The burden is acceptable as it is seen as helping to deliver safety.</td>
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</table>

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

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<td>See response to Question 41.</td>
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V.27.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry-specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

A directive approach is the preferred option as they allow for easy integration of with the local legislation/culture.

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

See response to Question 43. It is hard to develop a regulation that will meet the needs of all environments/countries. A directive achieves this goal.

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

No response.

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:

See previous responses.
V.27.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

*Changes are required to the Directive but these are not significant changes. The comments raised in the previous responses are areas within it can be improved.*

- More emphasis should be placed on process safety

V.27.12 Attached Information

No further information.
V.28. NOTES FROM INTERVIEW WITH:

Regulator
MMSSF, MMFPS, RIG and GSP

from

Romania
V.28.1 Demographic Questions

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<tr>
<th>Organisation:</th>
<th>MMSSF, MMFPS, RIG and GSP</th>
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<tr>
<td>Stakeholder type:</td>
<td>Regulator</td>
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<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Romania</td>
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V.28.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO$_2$ injection, CCS and fracking?

Response:

**MMFPS**


   a. Addressed to all workers engaged in offshore activities regardless of the quality they have operator, subcontractors, maritime workers etc.
   b. Apply to all the activities of workers, from transport to and from workplace including activity at work.
   c. The legislation covers all aspects of engineering, construction, and mining.
   d. It does not cover work on coal gasification, carbon dioxide injection, hydrocarbons fracking.

Sources of evidence:

**GD no.1050/2006**

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.
Response:

**MMFPS**


Council Directive no.89/391/EEC Article 16 paragraph (1) was taken into national law, namely Law no.319/2006 on safety and health at workplace through Article 51 (1) b) which states that through the Government decision on the proposal of the Ministry of Labour, Family and Social Protection will implement specific directives on the safety and health at work.

b. In this respect all Directives on safety and health at work were transposed including COUNCIL DIRECTIVE 92/91/EEC of 3 November 1992 concerning minimum requirements for improving the safety and health of workers in mining and drilling [the eleventh individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC].

**RIG**

In Romania, to transpose the two Directives, Directive 89/391/EEC and Directive 92/91 was issued an entire legal system composed mainly of law no. 319/2006 on safety and health at work, rules for the application of Law 319/2006 and applicable Government decisions in certain areas of activity, the legislation is supplemented by instructions issued by the employer for specific activities conducted in the unit he leads, which are binding and enforceable only within that unit.

**GSP**

In terms of GSP, because drilling platforms have not the Romanian flag, they are subject to European legislation directly, so that the reporting of GSP on legislation is to European legislation. In this sense, we can say that for offshore drilling platforms, OSH legislation, particularly that of countries in the North Sea (UK, Netherlands, Norway, and Denmark) is very effective in offshore drilling, with specific, well defined and uniform applied requirements, but also European law generally covers well enough offshore drilling industry.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?

   a. To national legislation.

   b. To Directive 92/91/EEC.

Response:

**MMFPS**

Introduction of provisions relating to:

- Training of emergency workers to intervene in emergency situations;
- Periodic inspections by the organisations in charge with the control issues on the technical state, fire, environment, workers training, accident prevention, the observance of legislation;
- Need to develop a best practice guide;
- Mandatory use of assistance / intervention ship (Stand-by Vessel or ERRV-Vessel Emergency Response & Rescue);
- Introduction of unique regulations in the field for all Member States;
- Uniform requirements regarding training;
• Uniform minimum requirements on health and medical certificates model issued for staff working in this area given their high mobility in Europe;

• Introducing mandatory periodic inspection and maintenance of transport pipelines.

RIG
We do not have proposals.

GSP
Changes should primarily aim at national legislation, but are required to be also included in the Directive, and among these we mention:

• Mandatory use of assistance / intervention ship (Stand-by Vessel or ERRV - Emergency Response & Rescue Vessel) for all drilling / extraction at sea.

• Introduction of a unique minimum standard for all countries.

• Standardisation of training requirements of personnel working in mining and drilling industry.

• Uniform minimum health requirements and medical certificates model for workers in mining and drilling industry, given their high mobility throughout the EU.

The mandatory introduction of periodic inspection and maintenance (annual) of oil transport pipelines (underground, underwater, pipes etc.).

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:

MMFPS
We believe that the draft Regulation should not prejudice the requirements of Directive 92/91/EEC in the field of security and health at work and other European directives.

We consider it necessary to maintain consistency in the definition and use of terms in the proposed European legal acts.

RIG
Issues to be addressed the issue on transport of persons and materials, both to marine and the terrestrial facilities.

GSP
Because we do not know the regulatory proposal on European oil and gas, we can mention only that it would be advisable, if to be made additions / changes to the directive, they will be compared with information from the legislative proposal, so that there is correlation and uniformity between the two.

5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:

MMFPS
Among guidelines or other regulations that may be used to increase the effectiveness of directives we mention:

• MODU Code that was taken into national law by Law no.315 of 10 November

Sources of evidence:

- IADC Guidelines (International Association of Drilling Contractors);
- NOGEPA Guidelines (Netherlands Oil and Gas Exploration and Production Association);
- IMCA Guidelines (International Marine Contractors Associations);
- IWCF Guidelines (International Well Control Forum).

RIG
No response.

GSP
MODU Code, IADC Guidelines, NOGEPA Guidelines, IMCA, IWCF Guidelines.

V.28.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.
### Managing Risk

**Response:**

**MMFPS**  
*On this question we cannot provide data because within the jurisdiction of our institution these issues are not covered.*

**RIG**  
*No response.*

**GSP**  
*The answer to this question should be provided by NAMR that should ascertain the percentage of total marine production, both at present and the one expected in the future.

*On the drilling activities of OMV Petrom: drilling of about 150 land wells per year from 2012 to 2016 (next 5 years) and up to 5 marine wells per year including those to be drilled in association with ExxonMobil.*

---

### 7. What is the balance of activity between offshore and onshore industries in your country?

- a. Proportions of exploration & development wells drilled onshore and offshore.
- b. Proportions of oil & gas production onshore and offshore.

**Response:**

**MMFPS**  
*Currently the number of wells on land is higher than those made from offshore installations.*

**RIG**  
*The number of land drilling is higher than in the marine environment, approximately 80% - 20%.*

**GSP**  
*In Romania, the largest share has land drilling, which covers about 80% of all drilling activities, only 20% being represented by offshore drilling.*

---

**Sources of evidence:**
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

**MMFPS**

In Romania, all companies in the drilling / extraction of oil are private, the only exception being PETROM, where the state is part of ownership.

**RIG**

In Romania, OMV Petrom owns 51% and the State 49%.

**GSP**

In Romania, all companies in the drilling / extraction of oil are private, the only exception being PETROM, where the state is part of ownership.

There is no difference in requirements for complying with H&S regulation between the public and private sector. All companies have to perform to the same standards and regulation in the same way. The employer is required to develop a system based on the transposed Directive.

Sources of evidence:
9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:

**MMFPS**

Were sent by Mr. George Dumitrescu to Mr. Mark Boult in person, at the end of the hearing on June 31 this year.

**RIG**

a. National Institute of Statistics forward centralised information about this aspect to EUROSTAR;

b. The number of fatal accidents decreased significantly due to increased awareness by workers of the danger in this area, due to stringent checks carried out by specialised services, due to the decrease of activity and the number of employee in the field of reference.

e. All accidents are submitted to the Labor Inspectorates using the methodology set nationally. Full details are available from the National Institute of Statistics and the Labour Inspection.

**GSP**

In the GSP there has been no fatal accidents and regarding accidents with temporary work incapacity in the table below you have their number distribution for each year:

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidents with temporary work incapacity</td>
<td>4</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

As the main causes of these accidents, it was lack of attention or level of inadequate attention for the activities carried out, workplace ergonomics and equipment malfunctions.

National Statistics recorded using EuroStat methodology. Using the definition of accident at work as Loss Time Injury (LTI). Format changed in 2005, so data from this date in 2005/6/7 includes O&G and connected services while stats for 2008 to 2011 only includes O&G industries (NACE Code). Maintenance is included in both data sets (part of operations), while vessels are outside of these statistics.

In the national statistics accidents in the industry are lower than in other industries with many of the fatal accidents being auto accidents. The only offshore fatality was in Dec 2005 (- during transfer by basket from vessel to rig in bad weather).


The decrease is seen as due to improved awareness and reduced numbers of workers in addition to more thorough inspections by the authorities.
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

**MMFPS**
No response.

**RIG**
Especially those international.

**GSP**
GSP policy is that every accident, including those of minor severity, be a lesson learned and be the basis of additional training for all relevant staff. For each accident are issued bulletins / alerts OSH (Safety Alerts) that are distributed to all workplaces to be discussed, representing a way to prevent recurrence of similar accidents. Also, these papers are collected throughout the global mining industry drilling, existing HSE networks, so that we can learn from accidents that occurred anywhere in the world, and thus ensure that all primary causes of accidents are identified, evaluated and removed in order to prevent their occurrence in the GSP.

In most cases, the main cause of accidents was poor identification of hazards and inadequate risk assessment before starting work.

It also includes activities for the regular check and maintenance of work equipment.

Regular inspections and visits by experts and specialists from the authorities, followed by plans for specific control measures would be a real support and guidance material to the knowledge and application of safety measures and best practices used worldwide.

Also learn from other people’s accidents e.g. Piper Alpha etc. – used to establish standards as there have been no major accidents in the country.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

   a. Number of occupational illnesses in the most recent year.
   
   b. Key types of illnesses.
   
   c. Please provide data sources (if available).

Response:

**MMFPS**

In 2011 it was reported only one case of occupational disease in the extractive industry by land drilling respectively a person 49 years with a seniority of 24 years who contracted professional chronic bronchitis.

**RIG**

A statistics of occupational diseases can be found at the Public Health Department and probably at National Institute of Statistics.

**GSP**

In the GSP was not registered any case of professional illness, an important reason for being and that all staff have conducted detailed risk assessments and have taken concrete measures to prevent risks of occupational diseases, including providing the best technology in the industry and personal protective equipment to minimise worker exposure at disturbing factors.

Sources of evidence:
OMV Petrom did not formally register any occupational disease.

<table>
<thead>
<tr>
<th>V.28.4 Regulatory approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. How has Directive 92/91/EEC been interpreted in your country?</td>
</tr>
<tr>
<td>a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).</td>
</tr>
<tr>
<td>b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?</td>
</tr>
<tr>
<td>c. What (if any) aspects of safety and health do they address that are not addressed by the directive?</td>
</tr>
</tbody>
</table>

Response:

**MMFPS**

a. Transposition mode was presented to the question # 2 b).

b. Directive 92/91/EEC was the only safety and work health regulation which set minimum requirements for improving safety and health protection of workers but has a general character. It is therefore necessary for employers to develop their own health and safety instructions at work according to specific conditions and features activities as provided in safety work health and law no.319/2006 and Government Decision no.1050 / August 9, 2006 on minimum requirements for ensuring safety and health of workers in extractive and drilling industry. In this respect employers have developed guidelines relevant to their own units.


We believe that is necessary to complete with the following issue referring to:

- Lifting equipment;
- Work on the storm;
- Abandoning the platform;
- Electrical safety including zoning issues

**RIG**

Directive 92/91/EEC has been fully taken into Romanian legislation;

The Guidelines issued by the employer details how to execute the operations for which there are no legal provisions, these regulations became mandatory for all unit staff.

**GSP**

No changes to the Directive or overlapping due to Romania moving to a market based economy in 2006 resulting in significant changes in all Romania legislation, so these all work together. This is the same for the whole Romania legislation beginning with the Framework law which transposes Framework Directive on H&S at work.

Don’t have provisions beyond Directive 92/91/EEC in terms of legislative framework, but the instruction (policies and procedures) of employers obligated to put in place & risk assessment become a piece of law on the territory of the employer in where they operate. These mandatory instructions are called SOPs (Standard Operating Procedures).
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MMFPS</strong></td>
<td><strong>Source reference(s)</strong></td>
</tr>
<tr>
<td><strong>Romania has transposed into national legislation Council Directive 89/391/EEC on the introduction of measures to promote safety and health of workers at workplace through the Law on safety and health at work no.319/2006. Council Directive 89/391/EEC Article 16 paragraphs (1) was taken into national legislation, namely Law no.319/2006 on safety and health at work through Article 51 (1) b) which states that through Government decision on the proposal of Labour, Family and Social Protection Ministry will be implemented specific directives on the safety and health at work. In this regard have been implemented all security directives on safety and health at work including Council Directive 92/91/EEC of 3 November 1992 concerning minimum requirements for improving the safety and health of workers in extractive and drilling industry [Eleventh special Directive within the meaning of Article 16 (1) of Directive 89/391/EEC]. Transposition of the Directive was made by government decision that is an act by itself and mandatory for the economic operators in the field.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>RIG</strong></td>
<td></td>
</tr>
<tr>
<td>Operators want to have descriptive, clear materials.</td>
<td></td>
</tr>
<tr>
<td><strong>GSP</strong></td>
<td></td>
</tr>
<tr>
<td>Yes as part of a Framework.</td>
<td></td>
</tr>
</tbody>
</table>

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MMFPS</strong></td>
<td><strong>Source reference(s)</strong></td>
</tr>
<tr>
<td><strong>The legislation on security and health at work is not just focused on the risks of major accidents, also addresses aspects of slight accidents with temporary incapacity, disability, fatalities and collective casualties.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>RIG</strong></td>
<td></td>
</tr>
<tr>
<td>Romanian legislation covers both minor accidents and major ones.</td>
<td></td>
</tr>
<tr>
<td><strong>GSP</strong></td>
<td></td>
</tr>
<tr>
<td>Covers all types of accidents.</td>
<td></td>
</tr>
</tbody>
</table>

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MMFPS</strong></td>
<td><strong>Source reference(s)</strong></td>
</tr>
<tr>
<td><strong>Romanian legislation as mentioned above enables the employer who knows best job characteristics, after risk assessment, to develop his own instructions.</strong></td>
<td></td>
</tr>
<tr>
<td><strong>RIG</strong></td>
<td></td>
</tr>
<tr>
<td>Romanian legislation is directed towards a purpose (target, goal). Specific rules of safety</td>
<td></td>
</tr>
</tbody>
</table>
MANAGING RISK

<table>
<thead>
<tr>
<th>and health at work, existing previously this legislation have been repealed, but their content is taken over and enriched with specific conditions to develop own health and safety instructions at work, fulfilling thus the legal requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GSP</strong></td>
</tr>
<tr>
<td>In Romania the legislation is concentrated in the direction of minimising the risks of accidents, so this is directed towards a goal, and has no longer a prescriptive character. Before the introduction of directive there were specific norms. After the directive was transposed all standards have been repealed, however operators still use many of them having put them into their own instructions.</td>
</tr>
</tbody>
</table>

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

**Response:**

**MMFPS**

Factors influencing the development of safety culture for the workforce:

- Knowledge of specific legislation in the field;
- Knowledge of the nature of injury risk factors;
- Acquiring knowledge and professional skills development;
- Eliminating formalism in conducting security briefings.

*In terms of encouraging labour force employment we mention that this activity falls within the competence of the National Agency for Employment.*

**RIG**

Romanian legislation is directed towards a purpose (target, goal). Specific rules of safety and health at work, existing previously this legislation have been repealed, but their content is taken over and enriched with specific conditions to develop own health and safety instructions at work, fulfilling thus the legal requirements.

**GSP**

*YES, legislation in Romania includes provisions to encourage workforce employment.*

Worker Safety Reps with specific tasks in H&S, elected by workers themselves form part of Safety Committee dependent on size of enterprise. They ensure consultation with workers and relationship with employers.

Safety Reps have to go through specific courses to take the role including on-going training. Initial training in basic OSH (80 hour course) is similar to Norway & UK training courses for safety reps in order to get competencies / skills after completing the training course.

Each work place has a Safety Officer appointed by company.

All employees will have H&S responsibility.

The law requires a company to give workers time for training and time in training is considered work time.

Any worker can report to the competent authorities’ incidents / dangerous situations. Anonymity requirement from law on the public sector workers (no incidents of confidentiality failures). Some find difficult to report and typically complaints would occur after they leave employment.

There is economic and social committee made up of the regulator, industry and union, which analyse and draft clauses before they are adopted by Government. There is a social sources of evidence:
dialogue (all industries) committee that covers all areas related to draft legislation. There is also a „transference” law which requires posting of draft legislation for consultation.

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:

**MMFPS**

Provisions relating to workplace safety and health in national legislation have a unitary character and are applied uniformly both to the public and private sectors without discrimination.

**RIG**

Specialised legislation existing in Romania is applicable and binding in both sectors of activity.

**GSP**

For private enterprises, OSH performance is more important and plays an essential role in the company because it represents a way to present the company’s performance to customers and to relate to customers, which in the case of public sector bodies is not applicable. Also, OSH legislation applies differently between private and public sector, the application requirements are more stringent in the private sector compared to the public one. This unfortunately creates imbalances and differences in OSH culture perception, which leads to the existence of two distinct levels of OSH performance, the private sector, in line with legal requirements and strictly monitored and the public sector, more generalised and insufficiently monitored.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

**MMFPS**

a. Guides available:
   - Best Practice Guide ATEX
   - Best Practice Guide on asbestos
   - Methodological guide for the prevention of risks related to exposure to carcinogens, mutagens and reproductive toxic agents
   - Best Practice Guide for working at heights
   - Best Practice Guide on the exposure of workers at risks arising from vibration
   - Best Practice Guide on the exposure of workers at risks arising from noise
   - Guidelines for evaluation of safety reports

Sources of evidence:
It is used depending on the particular job.

They were developed by the European Commission, Labour Inspection, SLIC, and INCDPM.

RIG

Transparency law obliges the authority to post on its site the normative act exposed to public debate;

Tripartite Economic Committee: Government - Employers - Syndicate;

Social Dialogue Commission.

GSP

In Romania there are not guidelines or sets of recommendations and best practices that can be a source of reference for organisations.

However, within the GSP we are not limited to the mandatory requirements established by law or authorisation, but try to implement the best techniques and practices in the industry that are only at the recommendation level. In this sense, GSP has aligned with the requirements of the North Sea (the most stringent requirements of the global mining and drilling), without having an obligation to do so, this approach represents a company voluntary alignment with these requirements, in accordance with HSEQ policy of the company.

V.28.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

MMFPS

a. The Law no319/2006 on work safety and health defines the notions:

dangerous incident - identifiable event such as explosion, fire, damage, technical accident, major pollutant emissions resulting from the failure of an activity or work equipment and / or the bad behaviour of the human factor which did not affected the workers, but it was possible to have such consequences and / or caused or was likely to cause material damages.

Serious and imminent danger of injury - a situation, real and present only lacks opportunity to trigger an accident at any time.

The Government Decision no.1425/2006 approving the Methodological Norms for applying Law no.310/2006 of work security and health is defined the notion:

High and specific risk area - those areas in the company and / or unit where risks have been identified that may cause accidents or illnesses with severe, irreversible consequences, respectively death or disability.
The Government Decision nr.1050 / August 9, 2006 on minimum requirements for ensuring safety and health of workers in extractive and drilling industry (which transposes Directive 92/91/EEC) is defined the notion:

hazardous areas - areas where, due to the nature of work, there are risks, including risks of workers and objects falling, workplaces must be provided, where possible, with devices preventing unauthorised workers entering those areas.

b. The legislation on work safety and health includes provisions on collective labour accidents caused by some special events such as crashes or explosions.

c. The legislation on work security and health includes the notions of “normal” and "critical". In our view the term "normal” is considered the situation when activities are done under conditions which do not endanger health or worker anatomical - functional integrity and cannot produce special events such as technical failures, explosions, releases of pollutants, etc. The term “critical” is considered when there is a malfunction (out of prescribed parameters) in an activity or work equipment or a worker’s misconduct.

RIG

GD 1050/2006 defines the risk of explosion associated with drilling activities and measures to be taken to keep the situation under control. Annex 1, section 6. Protection from harmful atmospheres and explosive risks.

GSP

Specific legislation in Romania do not treat "special sources of risk", instead it refers and treats all sources of risk.

Do not have such a term as Special Source of hazards. This has been changed to ,,specific” for the workplace.

Normal and critical situations are not defined in legislation, however it is understood that normal means cannot create harm (cannot endanger health of worker, cannot breakdown) and critical is a situation outside normal parameters of equipment or behaviour of personnel.

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

MMFPS

Government Decision no.1050/2006 in Annex 3 “Special minimum requirements applicable to the offshore drilling” provides at point 12, provisions on the location of installations at sea - safety and stability. In accordance with Law no.319/2006 on work security and health and GD no.1050/2006 the employer shall develop guidelines to cover risks that may arise in the drilling process with the location or change of location.

RIG

Moving to the drilling location of staff is treated in part, taking into account only helicopter transport, although transport is done also with ships;

Should be also taken into account transportation by vessels for the offshore and by vehicles for onshore transport.

The platform itself is considered a ship and can travel to move to another location.

Issues related to personnel transport and platforms moving to other sites are treated in detail in labour protection department rules specific to offshore drilling platforms, issued by the former minister of mines, petroleum and geology in 1980.

Sources of evidence:
## Relevant legislation only covers the drilling itself, without its preparatory phases, respectively mobilisation, platforms moving, etc.

### PETROM

Since the Petrom answer cannot be written in box this is at the end.

Directive could be clearer on this boundary as this is currently a grey area and not 100% clear. All offshore drilling is taking place in international waters in the Exclusive Economic Zone and there is no law extending land based regulations to this point, however this is dealt with in contracts agreeing that Romanian National Regulation should apply through the license.

For onshore activities the directive covers all activities within a site boundary for the lifecycle of activities, from the start of the site to decommissioning. For offshore legislation does not say anything about decommissioning or construction and remains unclear if covered by 92/91 or other regulation.

## What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

### Response:

#### MMFPS


#### RIG


Events due to work accidents are investigated in accordance with Romanian specific legislation.

#### GSP

Specific legislation covers only drilling phases, without the assistance on ships, offshore facilities construction and decommissioning.

### Sources of evidence:

## What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

### Response:

#### MMFPS

Currently in Romania is not performing the extraction of shale gas and oil.

#### RIG

These issues are not relevant in the Romanian legislation implementing Directive 92/91/EEC nor in the Directive 92/91/ EEC.

#### GSP

The legislation covers all types of drilling activities. However, drilling for shale gas / oil a moratorium is expected at European level in this respect.

There are no specific requirements on the areas mentioned above.
Petroleum Law governing oil operations, defined as “all activities of exploration, development, exploitation and abandonment of an oil reservoir, underground storage, transport and transit of oil in main pipelines and oil terminals operation”.

However, neither Petroleum Act nor implementing rules do not explicitly cover production of shale gas, oil production from bituminous shale and gas sequestration.

Anything involving drilling would be under the directive e.g. geothermal & water (mineral), salt extraction if production by drilling would be covered by Directive 92/91/EEC.

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

**MMFPS**

Other activities such as underground storage of natural gas or carbon dioxide capture and storage are not covered by the provisions of Directive 92/91/EEC.

Also we consider that Directive 92/91/EEC is not covering in terms of:

- Preventing outbreaks at drilling;
- Safety measures for the outbreak of free eruptions;
- Other drilling systems such as drilling using gas-well or air as a drilling fluid;
- Conditions of transport, drilling location erection and its removal upon completion of drilling.

**RIG**

No.

**GSP**

Legislation transposing Directive 92/91/EEC does not address these issues.

CCS is only in a project phase at the moment with no commercial activity so still uncertain if it will come under Directive 92/91/EEC. It will depend on the activities that need to be carried out. It is unknown if gas storage in old salt deposits is used in Romania, however storage in the same well after salt extraction would not be covered by Directive 92/91/EEC.

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”? Does it cover divers in diving operations?

Response:

**MMFPS**

Into national legislation “workplace” is defined both in the law no. 319/2006 on work security and health and the Government Decision no.1091/2006 on minimum safety and health requirements at work transposing Directive 1989/654/CEE on minimum safety and health requirements for work under the following form:

"workplace - the place intended to include workstations, located in the company building and / or unit, including any other place of business and / or unit area to which the worker has access in the course of activity development"

Also "workplace" is defined in the Government Decision no.1050 / August 9, 2006 on minimum requirements for ensuring safety and health of workers in extractive drilling.
industry to take into account the particularities of drilling activities and "workplace - the whole area intended to house workstations in the activities and facilities directly or indirectly linked to drilling extractive industries, including accommodation to which the workers have access during their activity ".

National laws stipulates that workers travel on normal route of travel from home to workplace and back is considered an activity that is part of the work process. In this sense any event that occurs during transit from home to workplace and back and during which an accident can occur is considered as work accident. Considering the above aspects we mention that the national legislation respectively Government Decision no.1425/2006 approving the Methodological Norms for applying Law no.319/2006 of work security and health, with subsequent amendments, introduced two concepts, namely "traffic work accident" and "route work accident" whose definitions are:

- "traffic work accident - accident occurred while on public roads or generated by road traffic, if the person was injured in the performance of service duties;
- "route work accident:
  a. accident occurred during and on the normal route of moving from workplace at home and vice versa and which caused an injury or death;
  b. accident during the regulated meal break in places organised by the employer, in normal route of travel from workplace at the meal place and vice versa, which caused an injury or death;"

In terms of diving operations we note that the national legislation adopted the Government Decision no. 350 of 21 July 1993 on the preparation, training, training improving and certification of divers, as amended and supplemented.

**RIG**

Romanian legislation implementing Directive 92/91/ EEC (GD 1050/2006) and in Directive 92/91 /EEC workplace is defined as a set of locations for placement of workstations within the activities and facilities directly or indirectly related to mining and drilling industries, including accommodation where workers have access during their work activity.

According to Romanian legislation, workplace begins when leaving home by a worker and an event happened during his/her travel to / from work is investigating as an accident on route.

**GSP**

Specific legislation includes the work route within the workplace, including transport by helicopter / ship, once the employee leaves home and travels to work on the set route.

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MMFPS</strong></td>
<td></td>
</tr>
<tr>
<td>In our National legislation &quot;employer&quot; is defined in Law No 319/2006 on security and health at work, as follows:</td>
<td></td>
</tr>
<tr>
<td>&quot;Employer - natural or legal person in employment or service relationship with the worker and has responsibility for the enterprise and / or unit&quot;.</td>
<td></td>
</tr>
<tr>
<td>The legislation applies without discrimination to all participants in the work regardless of the ownership and contractual forms of responsible licensees, owners, operators and sub-contractors.</td>
<td></td>
</tr>
</tbody>
</table>
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?

b. How do stakeholders understand this criterion?

Response:

<table>
<thead>
<tr>
<th><strong>MMFPS</strong></th>
<th><strong>Sources of evidence:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The term “major changes” is not explicitly defined in Government Decision no.1050/2006 nor in other relevant legislation on work health and security. We mention that the Directive 92/91/EEC in the Romanian version it was translated as “major changes” in the wording of Article 3 and was implemented in Government Decision no.1050/2006 also by “major changes”.</td>
<td></td>
</tr>
<tr>
<td>b. The major changes are seen as an upgrading by replacing some or all the equipment, machines, etc., downsizing or expanding production capacity, reduce or increase employment, a series of transformations that make the work to be carried out otherwise than initially.</td>
<td></td>
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</tbody>
</table>

In duly justified situations when there are legal and / or technical events, the normative act is subject to a review procedure which requires modification, addition, repeal, republish, suspension or the like. Review of work security and health legislation leads to a revision of management systems of the safety and health at work in order to introduce new regulations followed by retraining programmes for all relevant personnel ensuring uptake and implementation of new regulations to provide a safe working environment. The situation in which the repeal of regulations to help avoid a legal vacuum parallel to adopt a new regulation that would replace the repealed ones.

**RIG**

In the specialty legislation there is no term, as ,, major changes "

**GSP**

Health and safety document will be revised when the jobs will undergo changes, extensions and / or changes in accordance with GD 1050/2006. For this, the employer must take all steps to ensure that internal document changes to be made in accordance with the minimum requirements imposed by GD 1050/2006. Moreover, if the employer will update health and safety regulations to prevent serious or fatal accidents and serious dangers Petrom considers as major changes all changes that can have a significant impact on health and safety of staff, environment, assets and reputation.
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

**Response:**

**MMFPS**

Units that operate offshore activity organise QA / QC departments in charge of monitoring the integrated management system (eg. ISO 9001, ISO 14001, OHSAS 18001) to comply with international standards and legal requirements implemented or other legal requirements to which units have subscribed.

Integrated management system is subject to continuous improvement process by revisions necessary to adapt the management system to the requirements and the needs imposed by changes.

One of the employer's obligations under the Act of security and health at work no.319/2006 is to assess risks to health and safety, including choice of work equipment, substances or chemicals used and layout of workplaces and based on this assessment to establish preventive measures and working methods of production leading to improve security and health protection of workers.

**RIG**

Occupational safety issues (risk assessment, safety reports, verification activities, etc.) are regulated by law and are reviewed by county labour inspectorates and through their own systems for each unit (controls, audits, inspections with specific themes).

**GSP**

OMV Petrom has internal procedures relating to audits, inspections, technical integrity, and review of projects. Also, OMV Petrom strictly respects the Romanian legal requirements on the inspection of electrical equipment under pressure, fire and gas detection systems equipment inspection, danger zones certification, rescue teams licensing etc.

Oil and gas industry is in a transitional stage of implementation of international standards on drilling, such as API (American Petroleum Institute) and ISO European equivalent equipment and more specific drilling operations and standards, such as LOLER (Operations Lifting and Lifting equipment Regulations), ATEX (2 EU directives for controlling explosive atmospheres) and the IMO marine MODU (standards for mobile offshore drilling units of the International Maritime Organisation) and ABS (American Shipping Bureau for lifeboats). MODU IMO standards (Law 315/2005 for MODU 79/89), for example, are implemented in the Romanian legislation. ABS standards are covered by the Romanian Naval Authority.

Moreover, there are standards of inspection and certification of equipment and operations with high risk for safety such as ASTM (American Society for Testing and Materials), for which training is also provided in Romania (eg. NDT Inspector Level 3, NDT = non-destructive testing).

Documents written by a company after major changes has to inform via written report to the Labour Inspection (includes details relating to major changes and OHS details of hazards and risks to occupational health). This document is sent through to the local inspectorate; however responsibility for the quality of the document and competence of personnel remains with the employer and their internal processes. There is no national legislation relating to the verification of safety critical elements (no scheme required), but the Ministry has its own checklists / process for this.

**Sources of evidence:**

The S&H report covers Major Accident Hazards, Occupational Accidents and Occupational...
28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

**Response:**

**MMFPS**

Institution governing occupational safety and health field is the Ministry of Labour, Family and Social Protection. Supervision of the regulations application is provided by the Labour Inspectorate, the central public administration body subordinated to the Ministry of Labour, Family and Social Protection.

**RIG**

Territorial county labour inspectorates and General Labour Inspectorate perform periodic checks on the content and quality of documents produced under specialty legislation, applying corrections where appropriate. In addition, there are OHSAS certification bodies which are independent, from both the legislator and employer, and which check the implementation and observance of international standards on safety and health at work.

**GSP**

The Labour Inspectorate has a procedure to check the data included in the S&H document are real during inspections of the unit to check the data in the report and legal compliance. This is closed with an inspection report detailing if any deficiencies are found and if ok or not.

**Sources of evidence:**

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

**Response:**

**MMFPS**

National legislation by Law no.319/2006 on security and health at work cover in terms of safety and health at work all workers including those responsible for rescue and recovery operations.

**RIG**

Rescue work is part of the drilling-extraction activities, both offshore and onshore.

Actions are based on assumptions of risk factors identified and evaluated and, according to them, are planned and run rescue drills.

**GSP**

Yes, all workers with such tasks are subject to applicable legislation and are also specially trained in this regard.

**Sources of evidence:**

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

**Response:**

**MMFPS**

In Romania there is legislation on preventing and sanctioning all forms of discrimination (Ordinance 137/2000, republished).

**Sources of evidence:**
RIG

In this regard, both Directive 92/91/EEC, and GD 1050/2006, are neutral, but applies law 319/2006, on security and health at work.

GSP

Applicable law includes provisions on gender and disability issues. However, in the case of offshore drilling, due to the specific activity, health-related requirements and restrictions associated with major risks for the females and for persons with disabilities, these categories are incompatible with such jobs.

Directive is Neutral, it aims to protect from a safety point of view as opposed to being discriminatory e.g. young workers, pregnant women, breast feeding are forbidden from working in this area. Law on H&S at work requires that when hiring, employers must evaluate personnel and take special measures for vulnerable groups.

V.28.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

MMFPS


At the level of territorial inspectorates of work, inspectors are organised by activities. They carry out checks the economic operators, according to the profile of their activity.

At the end of activity they produce a document that does not always end with fines, but materialised in corrective action plans, followed by verification at deadlines.

RIG

At the level of ITM’s, inspectors are organised by activities. They carry out checks the economic operators, according to the profile of their activity.

At the end of activity they produce a document that does not always end with fines, but materialised in corrective action plans, followed by verification at deadlines.

GSP

Labour Inspectors are organised by the economic activity in the 42 counties of Romania. Each inspector undertakes inspections to ensure compliance. Inspection plans are established based on recent events, fatalities, risk levels, accidents, # employees etc. These involve planned and surprise inspections. Would normally expect to visit a rig once a year and an onshore facility one or more times a year. These inspections check compliance to the directive and are hardware and safety management system focused and is used as preventive measures after corrective measures have been implemented to confirm action has been taken within the deadline.

There are also national campaigns on specific risks organised e.g. falls from height, LPG,
32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

<table>
<thead>
<tr>
<th>Response: MMFPS</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Normative acts (laws, decrees, government decisions, and orders of minister) regardless of their hierarchy are required for all sectors both public and private.</td>
<td></td>
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<tr>
<td>Law no.319/2006 on work health and security requires employers to develop own health and safety instructions at work to complete and or enforce relevant regulations taking into account the activities particularities and specific conditions of employment.</td>
<td></td>
</tr>
<tr>
<td>To know the actual application of specific legislative acts there are control institutions that watch the implementation of their provisions.</td>
<td></td>
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<tr>
<td>Ministry of Labour, Family and Social Protection is the competent authority with regulatory role in the safety and health at work.</td>
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<tr>
<td>Labour Inspection is the competent authority regarding enforcement of legislation on safety and health at workplace.</td>
<td></td>
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<tr>
<td>RIG</td>
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<tr>
<td>Planned and unannounced inspections.</td>
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<td>GSP</td>
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<tr>
<td>Implementation of regulatory approaches is slightly deficient in the offshore drilling field, where there are not very definite limits of liability and applicability of national legislation. This can be improved by addressing examples implemented in the North Sea.</td>
<td></td>
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<tr>
<td>Changes appear following major events. Possible improvements include having a continual improvement programme, research in this field and improved technology as it changes.</td>
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</table>

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

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<tr>
<th>Response: MMFPS</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Overall responsibility for security and health officials and for any other workers both at workplace and during transport goes to the employer who must ensure that all means for personnel security and a safe working environment.</td>
<td></td>
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<td>RIG</td>
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<td>The employer bears responsibility of implementing technical and organisational measures of work security, according to the legislation in force.</td>
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<tr>
<td>He informs ITM about how to resolve deficiencies found in due time.</td>
<td></td>
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<tr>
<td>GSP</td>
<td></td>
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<tr>
<td>The company bears the overall responsibility for both OSH officials and for all other employees, both at work and during transport, and it should provide all means to ensure staff safety and a working environment as safe as possible. However, for the period the workers are on platform, responsibility for their safety bears the Head of platform, which is assisted in this respect by the HSE supervisor.</td>
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</table>
### V.28.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>MMFPS</strong></td>
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<tr>
<td>Regulations on safety and health at work are meant to eliminate or minimise workplace injury and disease risks specific to the job training (performer - the task - means of production - working environment).</td>
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<tr>
<td><strong>RIG</strong></td>
<td></td>
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<tr>
<td>Current legislation allows the employer to establish his financial arrangements in relation to specific conditions of the unit he leads, so it is hard to persuade the employer to make important expenditures for implementing technical and organisational measures in the work security field.</td>
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<tr>
<td><strong>GSP</strong></td>
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<tr>
<td>In the case of GSP, legal regulations are the starting point or basic reference for determining the specific occupational health and security procedures and minimum requirements in this field.</td>
<td></td>
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<tr>
<td>Believes old standards were more complex. Previously there was an obligation for all employers to implement in the same way. Now there is more flexibility so the methodology for compliance can vary as the obligation is on the employer, which helps SMEs. Believe it is better / easier to work with employers where specifics are regulated. Employer specificity to workplace (measures put in place) easier for the employer, however more difficult for the regulator as previous regulations were prescriptive and all complied, now the Law provides employer has to diminish risks to acceptable levels.</td>
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<td>There is now more than just regulations influencing safety e.g. accidents, OMV etc. and the industry is considered safer now under the new regulatory regime.</td>
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</table>

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>MMFPS</strong></td>
<td></td>
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<tr>
<td>As here it is necessary to have especially the opinion of economic operators we let them to express their points of view.</td>
<td></td>
</tr>
<tr>
<td><strong>RIG</strong></td>
<td></td>
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<tr>
<td>The fact that current legislation allows the employers to develop and apply their own instructions, is a favourable aspect.</td>
<td></td>
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<tr>
<td><strong>GSP</strong></td>
<td></td>
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<tr>
<td>a. The relevant legislation is effective, except in the offshore field.</td>
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</tbody>
</table>
b. Number of serious accidents and occupational diseases.

c. Mark 8.

Can judge from statistics. Starting to become similar to the UK sector with a lot of the UK guidelines beginning to be used.

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

It is more flexible and therefore can adapt to individual cases. Places more responsibility on operator.

Sources of evidence:

37. Please mention any other relevant issues from the practical application of the relevant legislation:

   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

MMFPS

a. As regards the difficulties it was highlighted the difficulties related to the training of workers that is their ability to assimilate knowledge, minimisation and sometimes ignorance of risks arising during the production process, in some cases carrying out with superficiality checks on safety and health requirements compliance.

b. As a positive aspect we mention transposing Directive 92/91/EEC into national legislation by aligning it to the European law applicable to occupational safety and health field. This gives employers a great deal of freedom in the preparation of document on occupational security and health thus giving them the possibility to cover all risks related to specific activities.

c. There were no reported adverse effects arising from the practical application of legislation on occupational health and security.

d. Self-employed and SMEs are or may be affected depending on the activity of operators in the sector.

e. The national legislation respectively the Law no. 263/2010 on uniform public pension system the activity of offshore personnel is considered to be classified as employment in special conditions which grants reducing the retirement age according to time worked on platform.

Sources of evidence:
RIG

a. There are no difficulties in applying the provisions of Directive in practice;
b. No unexpected positive effects;
c. No unexpected adverse effects;
d. Exploitation of ores by drilling - extraction activity can be specific to medium and large enterprises, but, for related activities may be involved and small and independent workers;
e. Employment of workers must take into account the vicissitudes specific to the working environment, the risks from work equipment and the work task, and the skills of workers to perform certain works.

GSP

As regards GSP, the fact that offshore platforms are directly subject to European and not only the national legislation was the positive side because regardless of the European area, platforms were aligned to the applicable OSH legislation.

Implementation of EU directives into the Romanian legislation in the field of safety was beneficial in terms of a new approach based on specific risk assessment and control measures compared with the old prescriptive legislation that was not updated at the technological progress level.

V.28.8 Evaluation

38. Are changes needed in the relevant legislation in your country?

   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?

   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?

   d. Otherwise, what changes are needed?

Response:

MMFPS

a. In terms of field operators Directive 92/91/EEC concerning minimum requirements for improving the safety and health of workers in mining and drilling [eleventh individual Directive within the meaning of Article 16 (1) of Directive 89/391/EEC] adequately protect workers in terms of safety and health. Is fit for purpose for which it was developed.

b. We have no record of serious events such as occurred on the platform Deep-water Horizon. Therefore we cannot assess whether Directive 92/91/EEC adequately solve similar scenarios.


d. We believe it would be necessary to complete the following issue on:
   - Lifting equipment;
   - Work during the storm;
   - Platform abandonment;

Sources of evidence:
• Electrical and zoning issues;
• Entry into service and operation of facilities;
• Operations which require the use of open flame.

**RIG**
Adding some explanations of terms and situations.

**GSP**
Yes, legislation adequately protects workers.

Because in Romania there were no major accidents like the one with the Deep-water Horizon, such risks have been identified as a result of major accidents worldwide;

Legislation specifies minimum OSH requirements adequately.

d. Changes in the OSH legislation for offshore drilling.

Yes. The old legislation was a prescriptive in the field of safety and did not take into account the latest advances in technology. The new approach gives operators the opportunity to apply best practices.

Authorities should periodically review existing legislation implementation and require the operator’s information about its practicability and possible improvements.

39. Are changes needed in Directive 92/91/EEC?

a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?

b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?

c. Does the directive specify adequate minimum safety and health requirements?

d. Is it consistently interpreted among the Member States?

e. Is the directive free of other significant gaps?

f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?

g. Otherwise, what changes are needed?

**Response:**

**MMFPS**

a. Directive 92/91/EEC transposed into national legislation by Government Decision no.1050/2006 addresses the main problems facing the mining and drilling industry, having a general nature. Both the Law no.319/2006 on safety and health at work and Government Decision no.1050/2006 provide that the employer is required to develop safe and health instructions with information depending on the particular activity, the specific work conditions and measures to be followed.

b. Not being defined term “major accident risk” and not having accident data on Deep-water Horizon platform, we cannot express a view.

c. Directive 92/91/EEC in its very title refers to the minimum safety and health requirements.

d. Directive 92/91/EEC shall be construed in accordance with the principles contained in the wording of its provisions.

e. We consider that here should be considered provision in Question 38 d.
f. Regarding the safety and health at work in the extractive industry through drilling we specify that only Directive 92/91/EEC was transposed by Government Decision no.1050/2006.

g. See a.

RIG

Adding explanations of some terms and situations

GSP

a. In terms of GSP, as drilling contractor, the Directive is adequate to protect safety and health of staff operating on offshore platforms.

b. Since at European level there have been major accidents like the one in the Gulf of Mexico, the directive had the necessary background to establish requirements for emergency scenarios.

c. Directive, with its annexes, specifies appropriately the minimum SSM requirements for offshore specifically for GSP.

d. In terms of national legislation, the Directive has been interpreted and translated exactly as it is, thus national legislation is identical to the Directive.

e. Since we do not know the legislative proposals, we cannot give an answer to this question, however, following the discussions we had, it appears that legislative proposals do not overlap with Directive 92/91/EEC.

f) We believe that no other changes are needed than those mentioned in previous questions.

PETROM

Do not see a need to change the Directive however clarifications of terms and situations that appear in the Directive would be useful. Additional information in support of the Directive that clarify what certain elements mean and explanatory guidelines that help to apply the Directive.

See that in future, a Tri-Party approach will be taken to develop guidance when an employer wants more prescriptive guidelines.

40. What would be the cumulative effect of the changes you have proposed to the directive?

a. What would be the cumulative effect of the changes?

b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

MMFPS

a. The cumulative effect of proposed changes should be reflected in lower number of work accidents and technical failures.

B & c. an evaluation of proposed changes may be made only after a certain period of time after application of amendments.

RIG

No response.

Sources of evidence:
The cumulative effect of proposed changes would be uniform minimum standards at European level, regardless of local context, which would assist local authorities in developing effective local law, adapted to oil and gas industry. The mark given after implementing the proposed changes is a 9.

Also, another effect, but also benefit at the same time would be reducing the number of accidents and/or prevention of major accidents by implementing specific, uniform measures to ensure a safe working environment for staff an environment.

V.28.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:

MMFPS
Powers of Minister of Labour, Family and Social Protection and the Labour Inspection regarding safety and health at work, do not include estimates with regard to the costs involved in implementation of Directive 92/91/EEC.

To make such an estimate is necessary to conduct an impact study to consult the field operators.

RIG
We do not consider that it is difficult to transpose provisions of the Directive if they are adapted to the environment specific conditions.

GSP
Current national administrative burden is relatively low because the measures imposed have no significant costs in order to ensure employees health and safety and environmental protection. Administrative burden can be assessed by identifying budgets needed to implement and accomplish the objectives and obligations of OSH. In addition, we believe that no special measures are required to minimise costs; this can be achieved through effective OSH policy.

Conducting a risk assessment can take effort, however it has to be done to help the employer. The cost of prevention is less than an accident and the cost can be considered justified and normal.

Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

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<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><strong>MMFPS</strong></td>
</tr>
<tr>
<td><em>We cannot make a prediction about the costs that it would require changes to the Directive.</em></td>
</tr>
<tr>
<td><strong>RIG</strong></td>
</tr>
<tr>
<td><em>No response.</em></td>
</tr>
<tr>
<td><strong>GSP</strong></td>
</tr>
<tr>
<td><em>As a result of implementing the proposed changes, the administrative burden would be higher, however, we believe that will continue to be at an acceptable and flexible level and taking into account the company's liability for employee health and safety and environmental protection. Also, we believe that existing systems can cope with additional demands.</em></td>
</tr>
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</table>
V.28.10  Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

MMFPS

On the balance between "regulation" and "directive" there are the following considerations:

- The Regulation would lead to the unification of European legislation for the following reasons:
  - Is a general act and binding in its entirety;
  - Is addressed to all Member States;
  - Is directly applicable and generates provisions taking effect immediately in all Member States as national legislation;
  - No need for intervention by national authorities.
- Directive sets out the main lines and gives more flexibility
- Should be considered administrative costs induced by the adoption of Regulation

RIG

Application in mineral extractive industries (which includes offshore oil and gas) of provisions common to all EU member states, producing such products would not be an obstacle, on the contrary, would lead to uniformity in the way of solving many deficiencies, knowing that it's better to learn from others experience.

GSP

Regulations are designed to support and to implement European directives, so it would be advisable to have a large number of regulations drawn from each directive, thus ensuring consistent implementation and more efficient of the provisions mentioned in the directives.

In favour of regulations as long as applied consistently (same standard across Europe) in all countries, as opposed to Member States interpretations. Directive or Regulation it needs to have minimum requirements in the field to be obeyed, with no overlap. The format is not so important so long as it is legally binding.

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?
Response:

**MMFPS**

*Directive makes no differentiation in terms of the application depending on the locations and date of work commencing in the extractive industry through drilling.*

**RIG**

*No response.*

**GSP**

*Directive is as effective as for locations with industry of different maturity only it is supported by an effective local legal framework. In locations / countries where there are no specific legal provisions for oil and gas industry or they are ineffective / inadequate, the directive does not apply as in other locations. In order to increase directive efficiency it requires the development of local legislation in the oil and gas field and uniform minimum requirements at EU level to ensure uniform application of the Directive. Also, availability of guidelines, recommendations and codes of good practice in the industry could provide support for effective implementation of the Directive.

As long as back up by an efficient local legal framework it would be effective for all locations.*

Sources of evidence:

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<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>MMFPS</td>
<td></td>
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<tr>
<td>Directive makes no differentiation in terms of the application depending on the locations and date of work commencing in the extractive industry through drilling.</td>
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</table>

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

**MMFPS**

*Directive 92/91/EEC has no specific provisions regarding the workers protection related to the activities in adverse weather conditions where there is extreme heat. Also the extremes or extreme low temperatures are not defined and extreme high temperatures correlated with humidity, wind, temperature-humidity index or index of cooling.

We believe that some provision need provided for when work is carried out in areas with extreme temperatures.*

Sources of evidence:
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:

**MMFPS**


By developing a best practice guide for the enforcement of the directive and periodic inspections by the competent authority for compliance to provisions of Directives. Internal Inspection program (at company level).

Sources of evidence:

V.28.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

*No response*

Sources of evidence:

V.28.12 Attached Information

PETROM – ANSWER TO QUESTION 20

Regarding drilling activities, Directive 92/91/EEC concerning minimum requirements for improving the safety and health of workers in mining and drilling has been transposed into Romanian legislation by Government Decision no. 1050/2006 on minimum requirements for ensuring safety and health of workers in mining and drilling industries ("GD 1050/2006"). This Decision provides the employer's obligations in this area and minimum requirements for ensuring safety and health of workers, applicable to marine and terrestrial mining sectors. - Ships in waiting for emergency situations, construction of offshore installations are provided in Annex no. 3 to GD 1050/2006 (relating to minimum requirements for the offshore sector). Risk assessment will be done, international standards and best practices will be followed to reduce risks to the lowest feasible in practical terms.


1. According to the Law of Oil exploitation means all work performed to and from the surface for oil extraction, collection, transport and transit through its main pipelines to achieve economic goals by using and exploiting it.
However, neither The Petroleum Law nor the Implementing Rules do not regulate different "parts" of oil exploitation activities.

GD 1050/2006 covers various aspects of the production process, such as, but not limited to:

- Stability and reliability: the jobs must be designed, constructed, installed, operated, supervised and maintained to resist outside forces to which they may be subject (Annex 1, paragraph 1);
- Jobs must be so organised as to provide adequate protection against risks (Annex 1, section 2.1.1);
- Areas where there are specific risks must be delineated and marked (Annex 1, section 2.1.3);
- For each job or for each activity safe must be applied safe working methods (Annex 1, section 2.7);
- Where appropriate, introduce a system of work permits for hazardous works and works that are not normally dangerous, but in interaction with other activities, can generate serious danger (Annex 1, section 2.8);
- Regular review of safety and health measures (Annex 1, section 2.9);
- Maintenance of protective equipment (Annex 1, section 4.2);
- During drilling operations must be provided appropriate equipment to control wells to prevent the risk of outbreak (Annex 1, paragraph 5);
- Protection from harmful atmospheres and explosion risks (Annex 1, paragraph 6);
- Fire detection and prevention (Annex 2, paragraph 1 and Annex 3, paragraph 2);
- Some equipment must, in case of emergency, to be controlled remotely from suitable locations (Appendix 2, Section 2 & Appendix 3, Section 3);
- Means of evacuation and rescue, including but not limited to proper training of emergency workers (Appendix 2, Section 5 & Appendix 3, Section 6), Annex 3, Section 6.4 regulates survival craft and rescue helicopters;
- Security Exercises (Annex 2, paragraph 6);
- Positioning of installations at sea - Safety and stability (Annex 3, paragraph 12) Following the example in question strictly, it is noted that activities of drilling are also covered, from a technical standpoint, by Law no. 50/1991 on authorising the execution of construction ("Law no. 50/1991"). According to art. 3 (1) letter e) of Law no.50/1991, drilling and excavations necessary to carry out geotechnical and geological prospecting, design and open pit mining and exploitation of gravel, oil and gas wells and other surface or underground mining can be executed in compliance with building permit regulations and regulations on the design and construction execution.

Also, covering while aspects can be particularly important for the drilling, should be mentioned national legislation on management of emergency situations. Government Emergency Ordinance no. 21/2004 on National System for Emergency Situations Management ("GEO no. 21/2004"), Art. 2 a) provides that an emergency is an "exceptional event, non-military, that through its extent and intensity threatens life and human health, important environmental, material and cultural values, and for restoration of normality are required measures and urgent action[...]".
In such an emergency, Article 4 of the GEO no. 21/2004 provides that certain actions and measures must be taken, including but not limited to: warning of people, institutions and business entities in areas of danger, operative intervention with forces and special means set up, depending on the circumstances, to limit and eliminate the negative effects, provide emergency aid etc.

In same context, Law no. 481/2004 on civil protection ("Law no. 481/2004") provides in Art. 1 (1) that "civil protection is a component of national security and is an integrated set of activities, measures and organisational tasks, technical, operational [...] in order to protect people, property and environment against adverse effects of the situations of emergency [...] ". In this regard, civil protection prerogatives include, for example - without limitation - the identification and management of types of risk generating natural and technological disasters on the Romanian territory, etc.
V.29. NOTES FROM INTERVIEW WITH:

Industry
OMV Petrom

from

Romania
V.29.1 Demographic Questions

Organisation: OMV Petrom
Stakeholder type: Operator
EU/EEA country/counties in which your organisation operates: Romania

V.29.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO2 injection, CCS and fracking?

Response: N/A. Session started at Question 6.

Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response: N/A. Session started at Question 6.

Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response: N/A. Session started at Question 6.

Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Session started at Question 6.

Sources of evidence:
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:
N/A. Session started at Question 6.

<table>
<thead>
<tr>
<th>Sources of evidence:</th>
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V.29.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?

d. Extent and plans for other “extraction through drilling activities”.

Response:

<table>
<thead>
<tr>
<th>a. Produce approximately 50% of gas (Romgas produce most of the rest) and 50% of the oil.</th>
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<tbody>
<tr>
<td>b. 150 onshore wells/year 2012 – 2016 &amp; up to 5 offshore wells/year (incl. Exxon). Expect more drilling with ExxonMobile over the next years. Other deep water wells held by LukeOil and Vanco. In Shallower water there are a lot more players</td>
</tr>
<tr>
<td>c. 30,000 Boe/day. Started production in 1987. 7 offshore platforms (predominantly gas). Onshore 9k producing wells</td>
</tr>
<tr>
<td>d. Current mission is to maintain or increase production over the next 5-10 years as there has been some reduction over the years as some fields 150 years old.</td>
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<td>Sources of evidence:</td>
</tr>
</tbody>
</table>

7. What is the balance of activity between offshore and onshore industries in your country?

a. Proportions of exploration & development wells drilled onshore and offshore.

b. Proportions of oil & gas production onshore and offshore.

Response:

| Petrom is the only producer offshore, with the next in the exploration phase. |
| 150 onshore : 5 offshore |
| Sources of evidence: |
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:
Petrom initially a State owned company until 2004, is now a Private enterprise with the Romanian State owning approx. 21% and the rest help by private ownership. Treated as just another private company by the regulator.
Romgas is essentially a State Owned Enterprise with a large stake 85% owned by the State.

Sources of evidence:

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

a. Trend (and number) of fatalities over the last 10 years.
c. Number of injuries in the most recent year.
d. Number of people employed.
e. Please provide data sources (if available).

Response:

a. Fatalities 10 (mainly transport) in 2008
b. The Loss Time Injury (LTI) rate has been reducing in Petrom.

Petrom Trend Loss Time Injury (LTI):
1 (2009)
0.65 (2010)
0.53 (2011)
0.5 (2012)
Outsourced activities are included in LTI statistics
c. Currently approx. 23,000 employees:
2008 (35k)
2009 (29.8k)
2010 (24.7k)
2011 (23k)
– trend down due to re-organisation, restructuring and outsourcing
Travelling to and from home accidents are considered work accidents.

Sources of evidence:

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:
The primary driver for legislation today has been joining the EC and the arrival of international companies in Romania using their own standards. It is believed these companies have increased the standards of other local companies (service and suppliers).
Piper Alpha has influenced everyone’s thinking but not sure if flowed through to the regulator. Macondo lead to significant concern in National Agency for Mineral Resources.

Sources of evidence:
(NAMR) in regards to the Domino well in the Neptun Block as this has been recognised as a risk but will probably not result in new regulation as the concern is mainly the environmental impact.

OMV Petrom implemented western standards in full. Time has been given to Romanian companies to come up to speed with the expected standards, which was accelerated due to fatalities (Dec 2011). This has not affected legislation, but the way OMV Petrom, Romanian industry and contractor’s works in adopting western standards. No compromises on acceptable standards are made. Some old equipment was built to old Romanian standards, which are not considered bad but are working to update these to become more compliant with western standards.

Petrom lead an HSE Oil and Gas “forum” where information on incidents are shared and also share material on an external server, which includes Petrom’s standards.

The last Blowout in Romania was in 2005. Risk Management includes the management of Major Accident Hazards (MAH) e.g. blowouts and asset integrity.

The company is developing systems based on Process Safety events. These are being tracked but it is currently too early to start trending, but starting to evolve leading indicators.

### 11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

| a. Number of occupational illnesses in the most recent year. |
| b. Key types of illnesses. |
| c. Please provide data sources (if available). |

**Response:**

Mainly through lifestyle issues / bad habits resulting in heart attacks (stress related), cardiovascular, heart and lung issues and food poisoning. Regular health checks are now offered on a voluntary basis.

Industrial related illnesses considered well managed with little evidence of issues relating to noise or dermatitis due to better standards.

**Sources of evidence:**

### V.29.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

| a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?). |
| b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive? |
| c. What (if any) aspects of safety and health do they address that are not addressed by the directive? |
### Response:

**a. Directive 92/91/EEC concerning the minimum requirements for improving the safety and health protection of workers in the mineral - extracting industries through drilling ("Directive 92/91/EEC") was transposed in the Romanian legislation by Government Decision no 1050/2006 regarding the minimum requirements for ensuring the safety and health protection of workers in the extracting industries through drilling ("GD no 1050/2006").**

GD no 1050/2006 fully and literally transposed Directive 92/91/EEC. Thus, the provisions of GD no 1050/2006 are almost identical to those of the Directive 92/91/EEC (e.g. including the definitions, structure and name of the articles/chapters, number, title and content the appendices, etc.).

**b. We did not identify requirements in GD no 1050/2006 that go beyond the requirements of Directive 92/91/EEC.**

**c. We did not identify aspects on safety and health addressed by GD no 1050/2006 which is not addressed by Directive 92/91/EEC.**

The contents of the required HSE case is driven by internal company standards more than legislative ones as the legislative requirements are considered general (92/91 is not prescriptive), as while they require a risk assessment and risk reduction plans, it allows companies to develop their own methodologies.

The Health & Safety Document require all facilities to have an HSE case equivalent to the North Sea Safety Case, but also includes an impact statement which is informed by the risk assessment and environmental impact assessment. The company standards are high and compliance therefore a relatively simple task of submitting the required documentation as the internal risk management processes exceeds this.

**Internally approval is through a Tollgate process (5 gates) which includes HSE requirements, High risk projects through an HSSE review and an independent group checking HSE relevant data.**

*There is seen as a potential to improve the culture of doing risk assessments in Romania.*

### Sources of evidence:

GD no 1050/2006

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13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

**Response:**

Romania has implemented Directive 92/91/EEC through GD no 1050/2006, as part of a wider health and security legislative framework.

The wider health and security Romanian legislative framework includes, without limiting to, the following normative acts: Government Emergency Ordinance no 21/2004, regarding the National System for Emergency Situations Management, Law 307/2006 regarding fire protection, Law no 481/2004 regarding the civil protection, Government Decision no 347/2005 regarding the approval of the National strategy for civil protection, Government Ordinance no 88/201 regarding the setup, organisation and functioning of the community services for emergency situations, Law no 319/2006 regarding security and health at work, Government Decision 1425/2006 regarding the approval of the Application Norms of Law no 319/2006 regarding security and health at work, Law No 333/2003 regarding the protection of the objectives, goods, values and persons, GD No 804/2007 regarding the control over the risks of major accidents with hazardous substances.

*There is some overlap in general obligations with the Framework Directive and 92/91/EEC e.g. pregnant ladies and other elements that cover all operations.*

### Sources of evidence:

mentioned normative acts
14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response:
We believe that Romanian national legislation is covering both major accident hazards and occupational safety, and during the last years (since joining EU) all relevant EC legislation was transposed in Romanian legislation (Seveso II directive, 92/91 EEC, 89/655/EEC, 95/63/EEC, 2001/45/EEC etc.).

However, the practical application (e.g. inspections by authorities) is focusing mainly on occupational safety and on compliance documentation.

The Romanian legislation in force focuses on the regulation of both major accident hazards and occupational safety.

Thus, the Romanian legislation equally regulates (i) aspects such as protection against emergency situations (seen as exceptional events, having a non-military character, which by its amplitude and intensity threatens the population’s life and health, the environment, the important assets and cultural values, requiring for the reinstitution of the normality the necessity of being adopted urgent measures and actions), fire protection aspects, civil protection (seen as an assembly of specific activities, measures and organisational, technical, operative etc. duties for the prevention and reduction of disasters risks, the protection of the population, assets and environment against the negative effects of the emergency situations, etc.), employees professional training on emergency situations domain, as well as (ii) specific aspects regarding security and health at work, such as, but without limiting to measures for the improvement of employees security and health, the prevention of professional risks, protection of the employees’ health and security protection, elimination of the risk factors and accidents, proper instruction of the employees, supervision of the employees’ health etc.

Sources of evidence:
For example, but without limiting to, we mention Law no 319/2006 regarding security and health at work, Government Decision 1425/2006 regarding the approval of the Application Norms of Law no 319/2006 regarding security and health at work, Government Emergency Ordinance no 21/2004 regarding the National System for Emergency Situations Management, Law no 481/2004 regarding the civil protection, Law 307/2006 regarding fire protection, Government Decision no 355/2007 regarding the employees’ health supervision, Order 712/2005 for the approval of General provisions regarding the employees training in the emergency situations domain.

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
By its literal transposition of Directive 92/91/EEC, GD no 1050/2006 maintains a goal setting approach specific to a directive. GD no 1050/2006 takes over the entire content of Directive 92/91/EEC with regard to the common, as well as the specific requirements applicable to the onshore and offshore sectors on mineral extraction through drilling, and it does not prescribe in more detail how to proceed.

Sources of evidence:
GD no 1050/2006
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>&lt;p&gt;Under Romanian labour legislation, the employer has the obligation to ensure the health and safety of the employees in all labour related aspects. Further, same legislation requires also the involvement of the employees in the aspects related to health and safety. It is required in many situations to have the employees and/or their representatives informed, consulted and/or trained on labour health and safety measures.&lt;br&gt;&lt;br&gt;For such, the employer has the obligation to organise the periodical training of its employees in labour health and safety field, the training of the new hired employees and when changes to the labour conditions occur. Furthermore, the training is mandatory in case of amendments to the legislation in the field.&lt;br&gt;&lt;br&gt;In addition, depending on the number of employees, it is mandatory to establish a labour health and safety committee that has as purpose the implication of the employees in the drafting and implementation of the decisions taken in the labour protection field.&lt;br&gt;&lt;br&gt;Moreover, the legislation in force provides for several obligations of the employees and reporting systems, such as (i) to comply with the labour health and safety measures taken by the employer, (ii) to take care of their own life, health and safety, and also of the life, health and safety of the persons who might be affected by their actions during working hours, (iii) to notify immediately the employer and/or assigned workers about any work situation on which he/she has serious reasons to consider as a danger for the health and safety of the workers, as well as any malfunctioning of the protection systems, (iv) to inform the manager of the work place and/or the employer about the accidents he/she suffered, (v) to cooperate with the employer and/or the assigned workers, as long as necessary, in order to allow the implementation of any measures or requirements established by the labour inspectors and health inspectors, for the protection of the health and safety of the workers, (vi) to cooperate, as long as necessary, with the employer and/or the assigned workers, in order to allow the employer to ensure a work environment and work conditions secure and without risks for the security and health, in his/her field of activity.&lt;br&gt;&lt;br&gt;Furthermore, Law no 319/2006 provides that the representatives of the workers having specific responsibilities in the field of health and safety have the right to require the employer to take appropriate measures and present proposals for such, in order to mitigate the risks for the workers and/or to eliminate the danger sources. In addition, these representatives and/or the workers have the right to address the competent authorities in case they consider that the taken measures and means used are not sufficient for the ensuring of the labour health and safety.&lt;br&gt;&lt;br&gt;Considering such, the legislation in force encourages and enforces the engagement of the workforce in safety related issues, by providing for the employees’ involvement in the labour health and safety process, the continuous training and by establishing a reporting system to be used by the workforce.&lt;br&gt;&lt;br&gt;In the Framework there is a requirement to involve employees (&amp; train reps) including periodical training of employees (annually and at changes). There is an obligation on employees to work safely and report dangerous situations / risks.&lt;br&gt;&lt;br&gt;Requirement for the company to have an H&amp;S position and a safety committee which includes the unions. In Petrom safety committees are established both at the local and central levels and have a daily safety observation program to encourage a safety culture.&lt;br&gt;&lt;br&gt;There are systems for anonymous reporting (near misses), with a close out process. An employee if reporting anonymous generally does this to the union as opposed to the regulator. In Petrom, there is anonymous reporting for near miss, dangerous situations etc. which is promoted with the award of a prize for the best reported.&lt;br&gt;&lt;br&gt;Petrom meet once or twice a year with several authorities to discuss trends and share H&amp;S&lt;/p&gt;</td>
<td>Labour Code, Title V, Health and Safety at Work&lt;br&gt;Law no. 319/2006 regarding the health and safety at work (“Law no 319/2006”)&lt;br&gt;Government Decision no 1425/2006 on the Methodological Norms for enforcing the provisions of Law no 319/2006 (“Methodological Norms”)</td>
</tr>
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</table>
17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: No response.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: None – however Petrom has its own list of standards that is uses including International standards such as API, & LOLER. Guidance however is internally driven as Government will make a decision on adequacy.

Sources of evidence:

V.29.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?


Internal OMV Petrom Documents cover: uncontrolled flares, landslides causing destruction, columns and pipelines, corrosion of buried pipes, excavations in the ground-oil impregnated, welding activities performed without gas concentration measurements, working at height without properly PPE work at height, working at height in improper weather, working with dangerous substances without properly PPE, pumping various fluids without checking safety valve, repairs to pipe oil, gas without washing, proper insulation, raising activities without verification of material handling ISCIR, activities carried out by cranes lifting, Wo-intervention activities performed with unverified preventers, working with lifting cables used showing, working in electrical isolation without proper, work in confined spaces where the contaminant may result in an explosion, reservoir fluid-loss due to corrosion, transport materials, equipment without ensuring their adequate.

Risk assessment – Fire fighting philosophy, Emergency response – incl. mustering, exit ways, muster list, drills, First aid, Medical surveillance (health Standard), Helicopter transportation and marine (boats), Training and competence, Maintenance (philosophy, strategy, procedures), PPE normative, Well control (Drilling), ATEX procedure (zoning, requirements etc.), Lighting (fire fighting philosophy), Access ways?, Safety signage, Handicapped workers (non-discrimination policy, internal regulations etc.), Remote ESD

Sources of evidence:

Government Decision No. 1050/2006 regarding the minimum requirements for ensuring workers’ health and safety in the drilling extraction industry (“GD no 1050/2006”)

Law no 319/2006

Government Decision No 804/2007 regarding the control over the hazards of major accidents where dangerous substances are involved (“GD no 804/2007”)
**MANAGING RISK**

| (facility design codes, remote shutdown procedures-Petromar), IT communications standard – LAN, WAN, landline, mobile etc. |
| Stakeholder engagement standard. |
| Immediately take the following precautions: (1). Stop equipment off work and / or activity, (2). Evacuation of personnel from hazardous area, (3). Announce services, (4). Announcement of the company accordingly, (5). Eliminating the causes that have led to serious and imminent threat status. |
| Romanian legislation imposes for the document on safety and health, which is mandatory for each employer to draft and implement, to include the assessment and evaluation of the risks the workers are exposed to at the workplace, irrespective of these refer to “normal” or “critical” hazards. |
| In case of offshore activity, such document on safety and health has to (i) identify the special sources of hazard associated with the workplace, including any simultaneous activity which may cause accidents likely to have serious consequences for the health and safety of the concerned workers, (ii) assess the risks deriving from the special sources of hazard referred to under point (i). |
| However, there is no definition of the special source of hazard and no distinction between “normal” or “critical” ones. All hazards, without distinction, have to be identified, assessed and diminished, if possible. |
| With regard to major accident hazards, Law no 319/2006 provides that serious and imminent accident danger is the actual, real and current situation that only lacks the triggering occasion to cause an accident in any moment. Special measures have to be taken by employers in such situations. |
| Furthermore, the dangerous incident is defined as the identifiable incident, such as explosion, fire, breakdown, technical incident, major gas emissions resulting from the malfunctioning of an activity or a work equipment and/or the inappropriate behaviour of humans that has not affected the workers, but it would have been possible to have such effects and/or has caused or would have been possible to cause material damages. |
| In addition, GD no 804/2007 considers as major accident the occurrence of an important substance emission, of a fire or of an explosion, resulting from an uncontrolled process during the running of any location and which may lead to the immediate or delayed appearance of serious danger on people’s health and/or environment, inside or outside of the location, and where are involved one or more dangerous substances. |
| Furthermore, GD no 1050/2006 provides that work involving a special risk has to be entrusted only to competent staff and carried in accordance with the instructions given. A similar provision is also included in Law no 319/2006 that stipulates that the employer has to take all appropriate measures so as, in the specific and high risk areas, the access should only be granted to workers who received and acquired the appropriate instructions. |
| a. There is no “official” definition for “special sources” of hazard, however in practice offshore can be considered special as it is inherently more dangerous and would include: transport offshore, escape and rescue and working in confined spaces. |
| Potential other aspects considered critical: fire protection; emergency preparation; First aid / medical surveillance; Transfer and helicopters; Training; Maintenance; PPE; Well control and ATEX. |
| b. Major accident hazards are real and current situations that only requires the trigger |
| Dangerous incidents include fire, breakdown, major gas emission that have not yet effected workers |
| c. There is no legal difference between “Normal” vs. “Critical”. In Petrom the risk... |
20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

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<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td><em>Petroleum Law no 238/2004</em> (“Petroleum Law”) regulates the petroleum operations as “the assembly of exploration, development, exploitation and abandonment activities of a certain field, underground storage, transport and transit of oil on master pipelines, as well as the operation of petroleum terminals”. Drilling activities are specific to both oil exploration and exploitation activities. Due to the complexity of the petroleum operations, Petroleum Law cannot and does not exhaustively regulate the drilling process. Thus, certain parts of the drilling process, such as the movement of a drilling rig to the drilling location are not covered by the legal provisions in force and therefore such situations are being dealt with by the industry depending on the specific factual conditions. The Application Norms of Petroleum Law approved by Government Decision 2075/2004 (the “Application Norms”) expressly refer to drillings for exploration-opening (the opening drillings having the objective of identifying new oil accumulations), exploration-evaluation and experimental exploration (during the assessment from quantitative and qualitative perspective of reservoirs, exploration-evaluation wells and experimental exploration wells are drilled which help identifying the extent of the productive acreage, physical-geological parameters, the potential of the discovered reservoirs as well as the technical and economic exploitation conditions). Change of applicable regulation to Directive 92/91/EEC is seen as at the point an installation goes on station. Therefore movement of drilling rig to location would not be under these regulations; however company procedures would still require a risk assessment approach. Directive 92/91/EEC is applicable once it becomes a fixed installation, exact point in time hard to fix. Difference of a few hours between these points.</td>
<td>Petroleum Law and its Application Norms</td>
</tr>
</tbody>
</table>
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

Directive 92/91/EEC was transposed into Romanian legislation through GD no 1050/2006, which provides for the employer’s obligations in this field and the minimum requirements for workers’ health and safety applicable to onshore and offshore drilling sectors. Stand-by vessels, construction of offshore installations are referred in Annex 3 of GD NO 1050/2006 (related to the minimum requirements applicable to offshore sector). Risk assessment shall be performed, international standards and good practices to be followed in order to reduce risks to ALARP level.

According to Petroleum Law, the petroleum exploitation represents the assembly of performed works on and from the surface for the oil extraction, collecting, treatment, transport, as well as transit through master pipelines, in order to achieve certain economical goals by its using and enhancement (Rom. punerea in valoare).

However, neither the Petroleum Law, nor the Application Norms regulates different “parts” of the petroleum exploitation operation.

GD no 1050/2006 covers different aspects relating to the production process, such as, but without limiting to:

- Stability and solidity: the places of works must be designed, built installed, exploited, supervised and maintained in order to resist to exterior forces to which they could be exposed (Annex 1, point 1);
- The work places should be organised in order to ensure an adequate protection to risks (Annex 1, point 2.1.1);
- The areas where it does exist specific risks must be delimited and signalised (Annex 1, point 2.1.3);
- At each working place or for each activity must be applied secure working methods (Annex 1, point 2.7);
- By case, a system based on working permits must be introduced for the execution of dangerous works and for those which are not dangerous itself, but could generate major hazards in connection to other activities (Annex 1, point 2.8);
- Periodically updating the health and security measures (Annex 1, point 2.9);
- The maintenance of the protection equipment (Annex 1, point 4.2);
- During the drilling activities should be in place the adequate equipment for the control of the wells (Rom. puturi), in order to prevent the eruption risks (Annex 1, point 5);
- The protection against the noxious atmosphere and explosion risks (Annex 1, point 6);
- Fire detecting and protection (Annex 2, point 1 & Annex 3, point 2);
- Certain equipment should be commended from distance (from certain places priory chosen), in emergency cases (Annex 2, point 2 & Annex 3, point 3);
- Evacuation and saving means, including but not limiting to the proper instruction of the workers in emergency cases (Annex 2, point 5 & Annex 3, point 6); Annex 3, point 6.4. regulates the rescue vessels and helicopters;
- Security exercises (Annex 2, point 6);
- The setup of the offshore installations - security and stability (Annex 3, point 12)

Sources of evidence: the mentioned normative acts
Strictly following the example included in the question, it is worthwhile mentioning that the drilling works are also regulated, only from a technical point of view, by Law no 50/1991 regarding the authorisation of the construction works execution (“Law no 50/1991”). Based on article 3 para (1) letter e) of Law no 50/1991, the drilling works and excavation necessary for the execution of geo-technical studies and the geological prospections, the design and opening of quarries and pits (Rom. balastiere) exploitation, of the gas and oil wells, as well as other surface and subsurface exploitations, may be performed solely with the observance of the building permit and the regulations regarding the design and execution of buildings.

Also collaterally covering aspects that might prove significantly important during the drilling process, one should mention the national legislation regarding the management of the emergency situations. Government Emergency Ordinance no 21/2004, regarding the National System for Emergency Situations Management (“GEO no 21/2004”), art. 2 letter a) states that an emergency situation represent “an exceptional event, having a non-military character, which by its amplitude and intensity threatens the population’s life and health, the environment, the important assets and cultural values, and for the reestablishment of the normality is necessary to be adopted urgent measures and actions, [...]”.

In such an emergency situation, article 4 of GEO no 21/2004 states that certain actions and measures should be taken, such as, but without limiting to: warning the population, institutions and economic agents from the danger areas, operative intervention with forces and means especially established, depending on the situation, for the limitation and elimination of the negative effects, granting emergency help, etc.

In the same line, Law No 481/2004 regarding the civil protection (“Law No 481/2004”) states in art. 1 para (1) that “the civil protection represents an assembly of specific activities, measures and organisational, technical, operative duties [...] for the protection of the population, assets and environment against the negative effects of the emergency situations [...]”. In this regard, the attributions of civil protection include, for example - but without limitation to - the identification and management of the risks types generating natural and technological disasters on Romanian territory etc.

The specific boundaries are not clear. As a company there is no differentiation as part of the risk management process. Standby vessels considered to be covered by marine legislation.
22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

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<th>Response:</th>
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| There is no restricted domain of drilling or production. Please observe the same approach as Question 21 above.  
The Petroleum Law regulates the petroleum operations which are defined as “the assembly of exploration, development, exploitation and abandonment activities of a certain field, subsurface warehousing, transport and transit of oil on master pipelines, as well as the operation of petroleum terminals”.  
However, neither the Petroleum Law nor the Application Norms explicitly regulates the production of shale gas, the oil shale production (Rom. Producerea de titei din sist bituminos) and gas sequestration.  
We also mention that we do not have any knowledge of the shale oil production in Romania and gas sequestration.  
This has only been a recent issue in Romania, so it has not been cleared up if this would cover unconventional resources. Currently law does not make any difference so would naturally apply current legislation to Shale gas/oil, however there is currently a debate on whether special regulations are required. |

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<th>Sources of evidence:</th>
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<tr>
<td>Petroleum Law and its Application Norms</td>
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23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO$_2$ capture and storage)?

<table>
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<th>Response:</th>
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| There are no specific provisions in the Petroleum Law or in the Application Norms which explicitly refer to the production of unconventional gas.  
There is a special regulation on CO$_2$ storage to implement directive 29/31, this is more on the process of storage as opposed to safety. There is currently no storage in old gas fields. Unable to find legislation that covers scope of Directive 92/91/EEC for these other activities but would expect Directive 92/91/EEC would apply to gas storage should there be a project. |

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<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Petroleum Law, the Application Norms, GEO no 64/2011</td>
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</table>

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat“)? Does it cover divers in diving operations?

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<th>Response:</th>
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<tr>
<td>GD no 1050/2006 defines the “workplace” as the whole area intended for the location of working stations within the activities and installations related directly or indirectly to the</td>
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<th>Sources of evidence:</th>
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<td>GD no 1050/2006</td>
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drilling extracting industry, including the accommodation the workers have access to during the performance of the activity. Additionally, Law no 319/2006 which also applies in this field defines the “workplace” as the place intended to comprise working stations, located within the company’s buildings and/or unit, including any other place within the area of the company and/or the unit and which the worker has access to during the performance of the activity.

Considering the above, the transportation of workers is not covered by the definition of the workplace. Still, if an accident occurs during such transportation, such accident is considered a work accident.

For such, Law no 319/2006 when detailing the work accidents, considers as work accident also (i) the commuting accident (i.e. the accident that takes place during the transportation of the workers, if the travelling is made during and on the normal route from the worker’s residence to the workplace organised by employer), (ii) the accident that occurs while travelling from the employer’s head office to the workplace, or from a workplace to another, in order to perform job tasks.

Furthermore, GD no 1050/2006 provides for the minimum requirements to be considered when organising outdoor workplaces

In practice the Ministry of Labour Inspection have viewed areas outside the site boundary (e.g. where the eat lunch) as workplaces. Transportation is not included in the work place, but commuting accidents are considered a work place activity. Generally helicopter and boat transportation are like car commuters. Helicopters are part of transportation and the workplace would commence once step off onto the platform.

No specific provisions on diving, but workplace definitions would cover diving.

The workplace onshore can be outside the boundary of the site, but there is not an accurate legal definition. Outdoor standards defined transposing the directive more relate to onshore workplaces

<table>
<thead>
<tr>
<th>Law no 319/2006</th>
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25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

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<tr>
<th>Response:</th>
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<tr>
<td>Law no 319/2006 defines the “employer” as the natural or legal person that has labour or work relations with a certain worker (defined as the person hired by an employer according to law, including the students, undergraduates during the practice period, as well as the apprentices and other participants to the work process, excluding the persons performing domestic activities) and has the responsibility of the company and/or the unit.</td>
</tr>
<tr>
<td>As regards the definition of the worker, the other participants to the work process are the persons found in the company and/or unit, with the permission of the employer, during the prior assessment of their professional capacities for hiring, persons that provide activities in the community’ interest or voluntary activities, as well as unemployed persons during professional training and the persons that have not concluded a written individual labour agreement (“ILA”) but it can be proved, by any means, the existence of the contract.</td>
</tr>
<tr>
<td>Under Labour Code, the employer is the natural or legal person that may, according to law, hire workforce based on ILA.</td>
</tr>
<tr>
<td>Considering such, the employer is the one who has labour relations with the respective worker, irrespective of the agreements existing between several contractors.</td>
</tr>
<tr>
<td>Liability is with the employer but also for visitors to the site. Obligations for sub-contractors are contained within contract H&amp;S provisions. Petrom maintains a bridging document for all service companies. In offshore OIM responsible for H&amp;S of own employees and service contractors supported by contract obligations. For onshore this would be</td>
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<table>
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<th>Sources of evidence:</th>
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<tr>
<td>Law no 319/2006</td>
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<tr>
<td>Labour Code</td>
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</table>
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

**Response:**

Recognising major changes that should trigger revision of the safety and health document are left to judgement of the employer. Legislation states “If necessary the employer has to update the health and safety documents regarding the corrective measures to avoid any occupational or major accidents as well as dangerous situations”.

OMV Petrom, as a stakeholder employs within its HSE management system a Management of Change standard applying to all activities of Petrom E&P and its contractors which defines the nature of changes that require an identification, assessment, documentation, approval and management of HSE risks and impacts of changes.

The internal safety and health document to be drafted by the employer as required by GD no 1050/2006 has to be revised when the workplaces suffer major changes, extensions and/or transformations. For such, the employer has to take all the measures in order for such changes to the internal document to be compliant with the minimum requirements set by GD no 1050/2006.

Further, if the case, the employer has the obligation to update the health and safety regulations in order to avoid serious or deathly work accidents, as well as serious danger. There is no legal provision that details what should be understood by “major change”.

There is no definition in legislation for a “Major Change”. The Management of Change process occurs if there is a required change in the H&S document such as after engineering, organisational, business environment changes.

**Sources of evidence:**

- Petrom E&P MOC standard, HSEQ-RO-06-07-00
- GD no 1050/2006
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or subject to independent / peer review? If so, how is this achieved?

Response:

The oil and gas industry is in a transition phase of implementing international drilling related standards such as API (American Petroleum Institute) and the European ISO equivalent for drilling equipment and operations and more specific standards such as LOLER (Lifting Operations and Lifting Equipment Regulations), ATEX (2 EU directives for controlling explosive atmospheres) and for offshore IMO MODU (Standards for Mobile Offshore Drilling Units by International Maritime Organisation) and ABS (American Bureau of Shipping for standby vessels). IMO MODU standards for instance are implemented in Romanian legislation. ABS standards are covered by the Romanian Naval Authority.

Moreover there are standards for inspection and certification of safety critical equipment and operations such as ASTM (American Society for Testing and Materials), for which respective training is provided also in Romania (e.g. level 3 NDT inspector, NDT = Non-Destructive Testing).

For the quality control of its own HSE documents OMV Petrom has its "Control of Documents Standard HSEQ-RO-00-02-02 o ensure appropriate control (preparation, check, approval, update, delivery and archive for its HSEQ MS documents since 01 2010).

Parts of our business (maintenance) are ISO 8000 and ISO 14000 certified.

They are archived electronically and in paper. If they are obsolete they are archived for further 3 years min.

Any project has to go through a 5 stage tollgate process with a detailed review process by a designated technical/economical/HSSE committee including project hsse reviews for high risk projects.

The practice in Petrom is to jointly develop the safety case with an external party. While there is no regulatory requirement for verification, based on Petrom’s requirements this is verified by an independent external party.

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:

The content of the S&H document is not directly subjected to quality control by the regulator. This is requested during inspections/audits to check for content and completeness.

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:

GD no 1050/2006 regulates the employer’s obligation to provide and maintain the proper means of evacuation and rescue, and has to take all the necessary measures in order to ensure the immediate evacuation and rescue.

GD no 1050/2006 regulates (i) in Appendix 2 on minimum special requirements applicable to onshore drilling, the means of evacuation and escape (providing, but without limiting to, that workers must be trained in the appropriate actions to be taken in emergencies) and (ii) in Appendix 3 on minimum special requirements applicable to offshore drilling, the means
of evacuation and escape (providing, but without limiting to, that workers must be trained in the appropriate actions to be taken in emergencies and that, besides the general rescue exercise, the workers must be specifically trained considering the working place).

Emergency workers are covered by legislation for their role. “Rescue & recovery” covered by Directive 92/91/EEC.

30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

The Romanian Constitution states in article 16 for the equality fundamental right “All citizens are equal before the law and the public authorities without any privileges or discrimination.”

The principle of gender equality is explicitly regulated under article 4 para (2) of the Romanian Constitution, which states that “Romania is the common and indivisible country of all its citizens, without discrimination on the ground of […] gender [...]”.

Law no 202/2002 regarding the equal opportunities and treatment between women and men explicitly defines and prohibits direct and indirect discrimination on gender grounds at all levels of public life, including but without limiting to equal treatment for women and men regarding the access to employment, vocational training, promotion and working conditions, etc.

GD no 1050/2006 provides that the workplaces have to be organised so as to take account of handicapped workers, if necessary. Moreover, Law no 319/2006 provides that sensitive groups to specific risks, such as pregnant women, women who have recently given birth, women breastfeeding, youth as well as handicapped persons have to be protected against any danger which specifically affects them. Additionally, the employers have the obligation to organise the workplaces considering the existence of such sensitive groups to specific risks.

Law 448/2006 provides that handicapped persons have the right to work according to their professional qualification and work capacity.

Not a discriminatory Directive. Only comments relate to breast feeding and pregnant women.

Sources of evidence:

Romanian Constitution,
Law no 202/2002 regarding the equal opportunities and treatment between women and men
GD no 1050/2006
Law no 319/2006
Law 448/2006 regarding the protection and promotion of the rights of handicapped persons ("Law 448/2006")
V.29.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:  
Current legal framework in Romania regulates (i) oil and gas activities (both offshore and onshore), (ii) mining activities and (iii) CO2 capture and storage.  

With regard to oil and gas activities:

- Petroleum Law:
  - In order to properly implement the Petroleum Law, the Application Norms were issued (in accordance with Law no 24/2000 regarding the legislative technique norms for normative acts drafting, the application norms are seen as being issued for the implementation of a law);
  - Under the Petroleum Law, the competent authority responsible with the enforcement of the Petroleum Law is the National Agency for Mineral Resources (“NAMR”); however, considering the interconnection between the execution of the petroleum operations and the environmental protection area, it could be stated that the relevant environmental authorities have certain supervision and control powers with regard to the performance of petroleum operations (as specifically provided under the Petroleum Law and its Application Norms);

- Gas Law: the competent authority under the Gas Law, responsible with its enforcement is the National Energy Regulatory Authority (“ANRE”); however, the Gas Law mentions that the natural gas policy is established by the Ministry of Economy and Business Environment (“MECMA”) based on the Government Program and thus MECMA ensures the enforceability of the natural gas policy;

- Liability: non-compliance with Petroleum Law & its Application Norms and the Gas Law triggers administrative, criminal or civil liability (as the case may be).

With regard to CO2 capture and storage:

- Under GEO no 64/2011, the competent authorities responsible with its enforcement are NAMR and ANRE; also, the Environmental National Guard exercises control and inspection powers with regard to environmental compliance of the activities performed under GEO no 64/2011;

- GEO no 64/2011 solely regulates an administrative liability in case of breaches of the legal obligations provided therein (for the avoidance of doubt, civil and criminal liability is not excluded);

Would see the same for on and offshore; however some subtle differences e.g. do not need a construction permit for offshore drilling but needed for new onshore drilling. Different framework for drilling – Petroleum law / Mining law, but don’t see it being regulated differently. No experience with CCS.

Sources of evidence:

Petroleum Law, the Application Norms, Gas Law, GEO no 64/2011

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:  
Romania has ensured proper implementation of its key laws through application norms, has designated competent authorities (NAMR, ANRE, MECMA. Additionally labour authority and environmental authorities have supervision and control powers. Non-compliance with

Sources of evidence:

Non-compliance with
the law triggers administrative, criminal or civil liability. Inspections are very frequent, involvement e.g. in emergency drills intense, follow up e.g. on incidents fast and efficient. Inspectors are competent (very often technical and/or petroleum engineers with experience). European legislation has been introduced almost word by word but its verification of implementation can be improved and there are significant regional differences. There is an opportunity for improved oversight by a competent authority to ensure nothing is missed and the safety culture is complete. Enhanced enforcement over drilling activities is a positive thing and transition from national to international standards.

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

The applicable legislation does not include specific provisions as regards the responsibility for the safety of regulators / enforcement officers while offshore or during transportation to offshore installations. Still, if involved in an accident, it is considered a work accident the (i) accident incurred by a person visiting the company and/or unit, which the employer’s permission, (ii) the accident incurred by persons performing State or public interest activities, during and due to having performed these activities, (iii) the accident which took place while travelling from the head office of victim’s employer, or from any other workplace organised by the employer, to another natural or legal person, to perform job tasks, on the normal transportation duration. Normally, the employer of such regulators / enforcement officers (i.e. the competent authority) has the obligation to ensure the safety of such persons, under general rules, including during transportation (points (ii) and (iii) hereinafter). According to the provisions of Law no 319/2006, the legal obligations regarding the health and security at work normally belong to the employer, which in such case is the competent authority. As regards the time such persons are offshore, on the installations, point (i) applies and, if the case, the accident has to be registered by the employer operating such installations and granting the permission.

As regards tort liability, the general rules apply and in case of accident, the entity/person responsible for the accident is liable. Moreover, the employer is liable for the damages caused to the victims of work accidents or professional diseases, provided that such damages are not totally covered by the state social security indemnity.

Furthermore, in such case, the criminal liability of the employer and/or of the person in charge with the legal occupational health and safety measures may be triggered in case of breach of the obligations and measures set for occupational health and safety in case a serious and imminent threat of a work accident or an occupational disease (it is not necessary for the accident to actually occur) is caused (imprisonment from 6 months up to 3 years or a fine).

Responsibility for regulators / enforcement officers falls under the general responsibilities of the employer. There is also a general responsibility of the company being visited. For offshore inspections it would be expected that the employer would require offshore survival training.

Sources of evidence:
V.29.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
- Starting January 1st 2007, when Romania became member of EU, the whole legislation was harmonised with the EU directives (as a condition of membership).
- As consequence, starting October 1st 2006, a new safety and health law was issued, representing the framework for issuing of other normative acts.
- The law establishes the measures to encourage improvements in the safety and health of workers, as well as the general principles regarding the prevention of occupational risks, health and safety of workers, eliminating risk factors and injury, training of workers and their representatives, and general directions for implementing these principles.
- The “new” legislation was adequate received because modifications from the previous version were understood and applied in short time.

Sources of evidence:
Lately Check of documentation has became the main focus. Due to resource restriction of the authority site visits are becoming less often in the last 2 years. The governmental departments have been significantly reduced due to the financial crisis and cost reduction of the Romanian state.

Company standards and procedures are considered beyond legislative requirements and the EU should consider agreeing on some standards.

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

a. How successful (in your opinion) is the implementation of the relevant legislation in your country?

b. What (if any) objective measures are available to show its effectiveness?

c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

Response:
Long history dating back to 1861 with more than 70,000 wells drilled. There is limited experience on the successfulness of the legislation due to the current transition phase from the old system to the new. For Petrom the OMV influence has been positive, and helpful. The improvement has been positive by following international standards and pushing contractors to adopt OMV standards, thereby increasing the overall standard in Romania and also enabling them to work anywhere in Europe. There is a change within the industry as they get to know the international standards.

Sources of evidence:

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?

b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).
The focus of Directive 92/91/EEC is on occupational safety and less on process safety, which has turned out to be key in preventing major accidents. It is focusing on reducing personal injuries and fatalities, but does only limited address Loss Of Primary Containment.

As the Romanian legislation is very similar the weakness comes from the EEC directive. Its strength is more on the offshore and less on the onshore drilling site.

Rating in Romania: 6 and in Europe 7. In Romania one point less due to its limited strictness in support, monitoring and control of its implementation.

The drilling industry of international oil and gas companies like OMV is driven by international standards.

Effective but mainly with occupational safety, less so with MAH. The Directive could be improved in MAH areas. Focus is on personal injury, safety and while it does cover this it could be enhanced to control major hazard accidents.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:
   a. Any notable difficulties in the practical application?
      Not the case
   b. Any unexpected positive effects?
      Looking in time, since the new legislation is in force, the number of occupational accidents significantly decreased, as well as the severity. It ensures a general applicable basis of minimum standards of local service providers to build on.
   c. Any unintended (or unexpected) effects?
      The fines are applicable only for the employer; in the previous version it was the possibility to apply some penalties also for the workers (rule violation).
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
      Especially for small enterprises and self-employed workers, the legal requirements - on the beginning of the activity are not known.
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?
      We can talk about some difficulties on recruitment process, related both to the age / sex of the employees; some companies, especially the medium and small size, prefer to hire only young people.

Sources of evidence:
V.29.8 Evaluation

38. Are changes needed in the relevant legislation in your country?

   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   Yes;

   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   Yes

   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   Yes; is very important that (according the law requirements) each company must develop his own safety management system as well as own safety instructions.

   d. Otherwise, what changes are needed?
    It is designed to protect the safety and health of workers and supports this process strongly, but the key drivers to this are a high HSE culture driven by the top management, high HSE and technical standards, with independent control of their effective implementation and compliance by international experienced companies.
    As proposed change is the upgrading of legislation based on new lessons learned and major accidents.
    Improvements are recommended on the frequency, expertise and quality of audits and inspections of compliance to and implementation of the legal requirements.
    Improvements
    Establish a "national regulatory body” which is a supervisory agency as partner to the oil and gas industry. Would like the EU to lead on the likes of shale gas and to make it clearer which legislation should be followed and check compliance. Guidelines / guidance note from competent body

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?

   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   
   c. Does the directive specify adequate minimum safety and health requirements?
   
   d. Is it consistently interpreted among the Member States?
   
   e. Is the directive free of other significant gaps?
f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?

Response:

| a. | Yes |
| b. | Yes |
| c. | No |
| d. | Don’t know |
| e. | Not when combined with other proposed EU directive |
| f. | Continuity – yes; overlap – no. |
| g. | N/A |

More guidance notes or guidelines which are updated regularly and meet international standards to ensure a continuous improvement process.

New areas require strong Management of Change processes and strong Technology Qualification processes which the industry is looking at, however there could be guidance on this or contained within the Directive.

40. What would be the cumulative effect of the changes you have proposed to the directive?

a. What would be the cumulative effect of the changes?

b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

If legislation is more demanding it would raise the levels in Europe. Would help operators not with international standards improve their operations? Reduce risk of major accidents and raise standards to those used internationally.

V.29.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?

a. Please outline the administrative burden implementing the directive in your country.

b. What (if any) objective measures are available to evaluate the burden?

c. Are any changes needed to minimise it?

Response:

HSSE is an integral part of the management system and our operations generally and therefore separate numbers on costs are not available, however the administrative burden of Directive 92/91/EEC is considered negligible, relative to what the company would do anyway.
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response: "Already comply with so negligible."

Sources of evidence:

V.29.10  Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response: "We are firmly of the view that it needs to be a Directive as:

- In favour of “Goal Setting” – allows local regulations to be developed;
- Regulation is more prescriptive and gives more scope;
- A regulation which would see the unravelling of regulations in North Sea countries – with a potential dip in safety performance (which industry would want to avoid);
- Better for locals to implement for their own situations;
- if not broken don’t fix it."

Sources of evidence:

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

Response: "Equally effective – yes. Guidance is always useful as long as it is guidance and not prescription. Immature countries can draw on experience from North Sea areas. In Romania deep water is new, so could argue could benefit from learning from others. Romania’s approach to deep water has not been amended due to no incidents in the past."

Sources of evidence:
45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

Equally effective – yes flexible for all environments applicable to everywhere (just says need to assess risk).

Carefully customised guidance notes prepared in consultation with industry would help to distinguish unique risks.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:

Guidance is always useful as long as it is guidance and not prescription.

Such guidance must be the subject of regular review and updating.

Sources of evidence:

V.29.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:

EU should not over-react to Macondo despite its obvious significance and severity. Properly customised guidance developed in consultation with industry is likely to be more effective than a wholesale replacement of well understood rules in certain jurisdictions from which lessons can be learned for the preparation of guidance for those jurisdictions which have yet to mature to the levels of the UK, Netherlands and Norway.

Sources of evidence:

V.29.12 Attached Information

No further information
V.30. NOTES FROM INTERVIEW WITH:

Industry
Exxon Mobil Exploration and Production Romania Limited (Romania Branch)
(“ExxonMobil”)

from

Romania
V.30.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>ExxonMobil Exploration and Production Romania Limited (Romania Branch) (“ExxonMobil”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Operator</td>
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<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>Romania</td>
</tr>
</tbody>
</table>

V.30.2 Initial questions

1. **What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?**
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   **Response:**
   N/A. The interview started at Question 6.

2. **How effective is the relevant legislation in your country?**
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   **Response:**
   N/A. The interview started at Question 6.

3. **What changes (if any) do you think are required following the Deepwater Horizon accident?**
   a. To national legislation.

   **Response:**
   N/A. The interview started at Question 6.

4. **What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?**

   **Response:**
   N/A. The interview started at Question 6.
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. The interview started at Question 6.

V.30.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: No response.

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: No response.

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: No response.

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response: No response.
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response: No response.

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

a. Number of occupational illnesses in the most recent year.

b. Key types of illnesses.

c. Please provide data sources (if available).

Response: No response.

V.30.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response: No response.

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: No response.

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: No response.
15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response:
While the regulator should comment specifically on your question, ExxonMobil believes a regulatory regime must strike an appropriate balance. We believe that both approaches (goal-setting and prescriptive) are workable, but what is important is the operation management system that underpins these efforts. We believe regulation which is centred on objective based regulation and encompasses appropriate risk assessment and management approaches has progressed results and yielded a more effective and efficient outcome for all parties.

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:
Within ExxonMobil, we ensure a top to bottom alignment on SSH&E goals and objectives (overall culture of the organisation from Sr. management to the personnel on the rig) through our structured Operations Integrity Management System. During our offshore activities, we have full time ExxonMobil safety experts on duty but everyone on board is aware and aligned that safety is the number one priority and anyone has the right to halt operations for safety reasons.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:
No response.

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

b. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:
No response.

Sources of evidence:

V.30.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?
**MANAGING RISK**

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td><em>ExxonMobil performs risk assessments during the well planning process and throughout operations to ensure critical operations are identified and proper mitigation measures are implemented. Fundamental to risk assessment is a culture that considers a combination of potential events and develops mitigating solutions. Assessments evaluate preventative measures and mitigation plans to manage risk during drilling operations. Structured risk assessments are conducted and reviewed at key milestones during the life cycle of a project including well design, critical operations and ultimate well abandonment.</em></td>
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</tbody>
</table>
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:
A structured Management of Change process is a key component of the OIMS system. Management of Change processes are designed to ensure that:

- The changed conditions are recognised.
- The new or changed risks are actively identified.
- The disciplined processes for managing the risks and their potential consequences are applied.

This results in clear ownership of the Management of Change process and a process for ensuring the implementation of the risk mitigation actions that have been identified.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
ExxonMobil has in place a systematic and disciplined framework to manage and measure safety, security, health and environmental risk from global operations built on the international expertise of the affiliated companies. This framework is called the Operations Integrity Management System (OIMS). It establishes common expectations for addressing inherent risks and is applicable to every significant operation that ExxonMobil undertakes globally. OIMS governs the specific work activities and designs required for safe drilling, and guide the activities of employees and third-party contractors involved in operations. The management system is embedded into everyday work processes and employees and contractors are required to be knowledgeable and compliant with OIMS as it pertains to their responsibilities. The global OIMS framework is applied to operations to ensure that design methodology and operating plans are appropriate for the specific type of work.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
All documents (EIA and safety and health related) were submitted to the appropriate competent authorities.

ExxonMobil’s practice is to require knowledgeable individuals to perform a detailed review of the design and execution plans to ensure well integrity. Where applicable, qualified independent third parties verify critical equipment integrity and suitability. Once operations are underway, significant variations to established procedures, variations in defined critical design parameters, or changes in execution procedures require a careful risk assessment and management review.

Sources of evidence:
29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response: 
EM covers workers involved in rescue and recovery operations with our Management Systems. OIMS Element 10 covers community awareness and emergency preparedness.

Sources of evidence:

30. How does your country's relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response: 
No response.

Sources of evidence:

V.30.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response: 
No response.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response: 
No response.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response: 
No response.

Sources of evidence:

V.30.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response: 
No response.

Sources of evidence:
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

   Response: No response.

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response: No response.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

   Response: The capacity of some of the less experienced countries to administer the requirements and keep up to date with technology may be a challenge.

V.30.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?
39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

   Response: No response.

   Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   Response: No response.

   Sources of evidence:

V.30.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

   Response: No response.

   Sources of evidence:
42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

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<th>Response:</th>
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<tr>
<td>No response.</td>
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</table>

**V.30.10 Future regulatory approach**

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions.

- What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>We support the industry view that a Directive is preferable to a Regulation. A Directive would enable countries to enact the provisions in a flexible manner, taking into account the existing national, regulatory regime and to decide the exact rules to be adopted.</td>
<td></td>
</tr>
</tbody>
</table>

44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

<table>
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<tr>
<th>Response:</th>
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</tr>
</thead>
<tbody>
<tr>
<td>No response.</td>
<td></td>
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</tbody>
</table>

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>No response.</td>
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</table>
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:  
No response.  
Sources of evidence:  

V.30.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:  
No response.  
Sources of evidence:  

V.30.12 Attached Information

No further information.
V.31. NOTES FROM INTERVIEW WITH:

Regulator
Health and Safety Executive
from
United Kingdom
V.31.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Health and Safety Executive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Regulator</td>
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<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/counties in which your organisation operates:</td>
<td>UK</td>
</tr>
</tbody>
</table>

V.31.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Response:

Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?

As we discussed at the interview, the UK’s offshore oil and gas Regulations, which address major accident hazard issues, refer to primary duty holder (the operator, in the case of a fixed installation, and the owner, in the case of a mobile installation) who is responsible for discharging the duties under the Regulations. The well operator is the duty holder for some well specific requirements and there are also requirements placed on the licensee. These duty holders are all defined within the legislation.

In regards to occupational health and safety, the Health and Safety at Work etc. Act 1974 (HSWA) places duties on the employers to ensure the health, safety and welfare of their employees and others who may be affected by their undertaking (e.g. subcontractors and the public). As we discussed the HSWA also covers the self-employed, they have to meet the requirements placed on the employer and employee.

b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?

All offshore work activities that are outlined in the Health and Safety at Work Act 1974 (Application Outside Great Britain) Order 2001 is within scope of the HSWA. If the activity is not covered by the scope of the HSWA the individuals involved in work activities will not be duty holders within the UK’s health and safety legislation (e.g. a vessel under navigation or a helicopter in flight). Such activities are covered by other regulators (e.g. CAA and MCA). Where there are grey areas of overlap of jurisdiction MOU are used to clarify responsibilities.

The offshore oil and gas work activities that come within the UK offshore health and safety regime fall within the definition of an offshore installation. This is defined as:

“(1) Subject to the provisions of this regulation, in these Regulations the expression “offshore installation” means a structure which is, or is to be, or has been used, while...”
standing or stationed in relevant waters, or on the foreshore or other land intermittently covered with water -

(a) for the exploitation, or exploration with a view to exploitation, of mineral resources by means of a well;

(b) for the storage of gas in or under the shore or bed of relevant waters or the recovery of gas so stored;

(c) for the conveyance of things by means of a pipe; or

(d) mainly for the provision of accommodation for persons who work on or from a structure falling within any of the provisions of this paragraph, together with any supplementary unit which is ordinarily connected to it or any part of it (including those parts described in paragraph (3) below) and all of the connections.

(2) Any reference in paragraph (1) to a structure or unit does not include -

(a) a structure which is connected with dry land by a permanent structure providing access at all times and for all purposes;

(b) a well;

(c) a structure or device which does not project above the sea at any state of the tide;

(d) a structure which has ceased to be used for any of the purposes specified in paragraph (1), and has since been used for a purpose not so specified;

(e) a mobile structure which has been taken out of use and is not yet being moved with a view to its being used for any of the purposes specified in paragraph (1); and

(f) Any part of a pipeline.

(3) For the purposes of these Regulations there shall be deemed to be part of an offshore installation -

(a) any well for the time being connected to it by pipe or cable;

(b) such part of any pipeline connected to it as is within 500 metres of any part of its main structure;

(c) any apparatus or works which are situated -

(i) on or affixed to its main structure; or

(ii) Wholly or partly within 500 metres of any part of its main structure and associated with a pipe or system of pipes connected to any part of that installation.

(4) Where two or more structures are, or are to be, connected permanently above the sea at high tide they shall for the purposes of these regulations be deemed to comprise a single offshore installation.”

c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?

The whole life cycle of the drilling and well operation is covered through well design, modified, commissioned, construction, equipped, operated, maintained, suspended and abandoned. Our legislation does not cover any mobile drilling unit when it is in vessel mode.

The whole life cycle of the production process is covered through design, construction, operation, maintenance and decommissioning and dismantling. Our legislation does not cover any unit in its vessel mode.

d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO2 injection, CCS and fracking?

Our legislation covers shale gas and oil activities, and any associated fracking, as these are

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Revision No.: 1 - Final
Date : 2013-02-15
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hydrocarbon extraction activities. Hydrocarbon gas storage in depleted oil and gas formations is also covered by our oil and gas legislation. Although hydrocarbon gas storage in depleted oil and gas formations is covered by our oil and gas legislation, hydrocarbon gas storage in geological formations that do not contain petroleum is not covered by our oil and gas specific legislation. There is also doubt if underground coal gasification is covered by our oil and gas legislation as the gas produced may not be a mineral.

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response:

In the context of offshore oil and gas, the UK’s legislation implementing the Framework Directive and Directive 92/91/EEC is effective. Practical implementation of the directive in the UK remains robust, supported by a strong regulator, helpful free guidance and industry / regulator / union meetings to discuss issues and to develop good practice and promote compliance. This statement is support by the fact that the EC has decided to largely base its offshore oil and gas proposals on the UK regime, indicates that they see the UK regime as a benchmark for others.

The UK’s high standards have also been acknowledged by both the Energy and Climate Change Select Committee in their report into the implications of the Gulf of Mexico Oil Spill and in the Report of the US National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling where it was recommended that the US safety regulations be expanded to be at least as stringent as those in the UK. And more recently, whilst making recommendations on how the UK can take things further the report from the independently chaired regulatory review (Maitland Review) recognised the positive aspects of the UK regime. It cited in particular:

- The stringent assessment of environmental impacts;
- A safety system that requires industry to identify hazards, assess the risks and follow best practise to manage them; and
- The comprehensive emergency response framework.

These reviews support the UK view that the UK’s regime is robust and appropriate. However, we are not complacent, and we will continue to consider the lessons from the ongoing investigations and reviews following the Gulf of Mexico incident and the offshore oil and gas proposals emerging from Europe and recent Parliamentary Select Committee and other independent reviews of the UK system following the Deepwater Horizon incident.

The UK’s offshore health and safety regime was developed prior to the introduction of Directive 92/91/EEC on minimum requirements for improving the safety and health protection of workers. Directive 92/91/EEC sets a lower standard than the UK’s Offshore Safety Case Regulations (SCR), and other relevant offshore legislation. Therefore we feel that the Directive has had no influence on the UK’s current regime.

Following the Deepwater Horizon incident in the Gulf of Mexico, the EC has considered the adequacy of EU and Member State legislation of offshore oil and gas extraction. They have concluded that improvements are needed, and have published draft proposals to improve the standard of regulation. This suggests that the Directive has not been effective in delivering its aim.

HSE’s experience of implementing the UK’s offshore safety regime, including updating it and improving it where necessary (e.g. in 2005 we moved to a thorough review of safety

Sources of evidence:

| HSE |
cases every 5 years rather than resubmitting safety cases every three years to reduce administrative burdens on industry and allow the regulator to spend more time inspecting offshore) also indicates the current regime is robust and effective.

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response:
Annex 1 outlines our suggested changes to the directive, but these issues were identified before the Deepwater Horizon incident; these are general gaps in the directive that have always existed. Many of the issues we raise could be addressed by the EC’s proposed offshore oil and gas regulation. The question is to what extent such requirements also need to apply to onshore oil and gas activities, and so be addressed in the directive.

Sources of evidence:
HSE

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response:
It is difficult to remove the major hazard requirements from 92/91, so that the major hazard issues are addressed by the proposed Regulation and the occupational safety issues are addressed by Directive 92/91/EEC, as the major hazard elements in the directive need to continue to apply on onshore oil and gas activities. It should also be remembered that Directive 92/91/EEC covers onshore as well as offshore activities. Appropriate officials in each country may also have to consider if some of the requirements within the proposed European offshore oil and gas regulation should be included in the Directive 92/91/EEC, so that they also apply to onshore activities (e.g. independent well examinations).

There is clear overlap in requirements for a Health and Safety Document (Directive 92/91/EEC) and a Major Hazard Report (new European proposals). Steps need to be taken to clarify industry and operators what steps are needed to meet the requirements in these areas. There is also doubt whether the current text of the proposed Regulation which indicates that the Regulation’s requirements are without prejudice to other directives (e.g. Directive 92/91/EEC), is legally sound. UK lawyers are concerned that this was not legally possible given the direct acting nature of a Regulation. The UK has highlighted that a directive would overcome this legal issue.

There are also further overlaps (e.g. on general requirements to assess and control risks). The EC should be asked to reduce any overlap to a minimum and make it clear to operators and regulators how these two bits of European legislation will work in practice.

In Annex 1 we have suggested updating the annexes to Directive 92/91/EEC. If Major Hazard and general occupational health and safety requirements were clearly separated, then it would be easier to identify overlap with the proposed new Regulation and take steps to make it clear what was required by industry and operators. For example, a statement highlighting that if they are meeting their major hazard requirements under the new European Regulation, they are also complying with the major hazard responsibilities under Directive 92/91/EEC.

Work is needed to clearly clarify that to all duty holders their responsibilities under Directive 92/91/EEC and the proposed Regulation, and to clarify the duty holder in each case.

Annex 1 also outlines some of the practical difficulties the UK has with Directive 92/91/EEC and what can be done to improve the directive.

Sources of evidence:
HSE
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response:

The EC needs to clearly outline in the proposed offshore oil and gas regulation, and any amendments to the directive, the overlaps between these two instruments and how regulators and duty holders should effectively address these duplicating requirements. For example, the proposed Regulation should only relate to the major hazard aspects of Directive 92/91/EEC and the directive should make it clear that any a health and safety document prepared under Directive 92/91/EEC can contribute to the Major Hazard Report required under the proposed regulation.

At a national level, to support Member States effective implementation of the proposed Regulation and it’s meshing with existing requirements introduced to implement the directive, the EC should consider re-introducing its offshore oil and gas proposal as a directive rather than a regulation. This will give Member States greater flexibility to ensure good meshing with existing regimes while still implementing the new requirements. This will also ensure that existing national legislation that has been effective or any years can remain, as well as guidance and work procedures that relate to such national procedures. This approach will also mean that industry are likely to have to take less staff off supervising front line safety, to be desk bound updating procedures to take account of a new direct acting European regulation.

Whatever legal instrument is selected by the EC, Member States will need to develop new national guidance, with industry and unions, to explain the new offshore oil and gas requirements and how these will mesh with existing national offshore oil and gas regulations. Regulators and industry will also need to ensure that both inspectors and relevant workers are adequately trained.

Sources of evidence:

HSE

V.31.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?

a. Please provide a brief description of relevant activities in your country.

b. How many exploration & development wells drilled annually, and expected trends?

c. How much oil & gas production annually, and expected trends?

d. Extent and plans for other “extraction through drilling activities”.

Response:

Please see the attached information provided by DECC.

Sources of evidence:

DECC

7. What is the balance of activity between offshore and onshore industries in your country?

a. Proportions of exploration & development wells drilled onshore and offshore.

b. Proportions of oil & gas production onshore and offshore.

Response:

You can get a feel for this from the DECC information provided.

Sources of evidence:

DECC
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response:

We have not public bodies involved directly in the exploration or production of offshore oil and gas. Public bodies are involved in the administration and regulation of this activity.

Sources of evidence: HSE

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response:

Please see the attached statistics:

Sources of evidence: HSE

10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:

Hydrocarbon releases are regarded as potential precursors to major accidents if ignited, and HSE monitors the number of major and significant hydrocarbon releases as a KPI of the offshore industry’s effectiveness of process health and safety management on offshore installations.

Annex 2 of the attached statistics, http://www.hse.gov.uk/offshore/statistics/hsr1011.pdf provides supplementary information relating to activity that the offshore industry representative body Oil and Gas UK have been undertaking in respect of additional KPI monitoring activities. This monitoring activity is not undertaken by HSE and is included in this report for information only in the context of providing a more complete picture of UK offshore KPI monitoring processes undertaken by both HSE and the industry.

Sources of evidence: HSE

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:

Please see the attached statistics:

Sources of evidence: HSE
V.31.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Response:

a. Please provide a brief summary of how the directive has been transposed.

The UK has implemented Directive 92/91/ECC via the following Regulations:

- The Offshore Installations (Safety Case) Regulations 1992 and 2005 - their primary aim was to reduce the risk from major accident hazards to the health and safety of the workforce employed on offshore installations or in connected activities. They required every operator, or owner, of an offshore installation to prepare a safety and health document (safety case) and submit it to HSE for acceptance. This will cover the principles of risk prevention, the assessment of risks and the preventative and protective measures selected. Operators are also required to set up a verification scheme and seek input from independent competent person;

- The Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995 - these set out requirements for the safe management of offshore installations, such as the appointment of installation managers, the use of permit-to-work systems, health surveillance and;

- The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 - these provide for the protection of people from fire and explosion, and for securing effective emergency response. They require the necessary assessment of risks and the introduction of appropriate control measures to address these risks;

- The Offshore Installations and Wells (Design and Construction, etc.) Regulations 1996 - these set out requirements for the integrity of installations, the safety of offshore and onshore wells, and the safety and welfare of workers offshore. They require the necessary assessment of risks and the introduction of appropriate control measures to address these risks; and

- Onshore, the Borehole Sites and Operations Regulations 1995 came into force in 1995. The regulations implemented requirements in the directive, not already covered by the offshore regulations. These include the production of an onshore health and safety document.

- Offshore Installations (Safety Representatives and safety Committees) Regulations 1989. These regulations cover requirements related to consulting and informing workforce representatives and on the responsibilities and powers of safety representatives.

- Offshore Installations and Pipeline Works (First-aid) Regulations 1989. These Regulations outline the offshore first aid and basic health care provision requirements.

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

The UK offshore health and safety regulations introduced after the Piper Alpha incident require a range of additional measures that the EU did not adopt when it introduced Directive 92/91/EEC. These are too numerous to mention in detail, but they include:

Sources of evidence: HSE
Health and Safety Document (Safety Case) acceptance and review - The UK offshore safety case regime requires every drilling rig and offshore production platform to have a Safety Case that is accepted by HSE before operations commence. Although Directive 92/91/EEC has the requirement for a “health and safety document” which is broadly similar in scope, it does not require the relevant Member State regulator to assess the suitability of this document and the systems it describes. We find the assessment/acceptance work that we undertake to be an essential element of an effective safety case regime. Similarly, we require operators to keep their Safety Case “up to date”, to seek further approval when significant changes are made, and to undertake a more formal thorough review of the document every 5 years, all areas on which Directive 92/91/EEC is silent. These additional requirements help to ensure that the Safety Case becomes a living document, and one that forms a central part of an operator’s safety management system.

Notifications - The UK regime requires offshore installations to send notifications to the regulator at appropriate times, over and above any Directive 92/91/EEC requirements, including:

- Well design and drilling information to be notified at least 21 days prior to drilling or well intervention taking place;
- Weekly reporting of well related information when undertaking offshore drilling and wells operations;
- Notification of early design details for production installations;
- Notification of combined operations;
- Notification of entry into waters and relocation.
- Notification of a variety of “dangerous occurrences” relating to well and platform incidents that could affect safety integrity, such as leaks of hydrocarbons.

Such notifications allow early intervention by regulators when necessary.

Independent Verification - The UK has, uniquely, a system of independent evaluation of key offshore systems:

- Regular independent verification by bodies such as DNV, Lloyds Register, BV etc. that safety critical equipment offshore, such as blow out preventers, is capable of meeting defined performance standards; and
- A statutory requirement for well operators to obtain a check of the design and construction of the well by an independent competent person (a wells examiner) to ensure it is fit for purpose.

This independent examination and verification provides extra assurance to both the operator and regulator.

The role of the Licensee – It is the licensee who often appoints the person in control of the offshore installation. In the UK the licensee is required to: appoint someone who is competent and they also provide appropriate resources for them to deliver their health and safety roles and responsibilities. They are also required to monitor the capability of operators and their ability to discharge their responsibilities.

Transporting Inspectors Offshore - The requirement to oversee compliance, including offshore inspections, is a critical part of regulators responsibilities. It is therefore essential that inspectors are transported offshore, accommodated offshore and provide with meals and other subsistence offshore. UK legislation places a duty on the operator to deliver these requirements, and a new article is proposed to incorporate this element.

Decommissioning and Dismantling – UK legislation covers the whole life cycle of the
installation, including decommissioning, dismantling and deconstruction.

- Full well life cycle (e.g., design, construction, control and well integrity management) – UK legislation has requirements that ensure that the risks for the whole well life cycle are assessed and appropriate controls put in place. Without this key issue, like well design, will not be addressed by the operator or regulator. The early lessons from Deepwater Horizon indicate well integrity issues are crucial to avoiding major accidents.

- Safety Representatives – As well as ensuring workers are informed and consulted our regulations give powers and responsibilities to safety representatives to ensure that they play an active role in ensuring that offshore oil and gas major hazards are effectively managed.

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Article 3 of the directive is very general and covers most work drilling related activities and the risks associated with them. The additional European health and safety directives in place (e.g., the framework directive and other health and safety directives) provide further detail on specific procedures (e.g., risk assessment and risk management) or how specific risks should managed (e.g., manual handling or working at height).

In the UK, we have the HSWA which outlines the general duties on employers (e.g., to ensure the health, safety and welfare of all his employees). Then we have our offshore safety legislation, including the safety case regime, which are focused on ensuring that activities with major accident potential are assessed and effectively managed. We then have our Health and safety Management Regulations, and a range of health and safety regulations which are in place to ensure that occupational health and safety risks to workers and others are assessed and effectively managed.

d. What other legislation in your country is concerned with safety and health at work in mineral extraction through drilling?

The Health and Safety at Work etc. Act 1974 (HSWA) is the primary piece of legislation covering occupational health and safety in the United Kingdom. The Health and Safety Executive is responsible for enforcing the Act and a number of other Acts and Statutory Instruments relevant to the working environment. The full text of the Act is available at the UK legislation website.

Statutory instruments are the secondary types of legislation made under specific Acts of Parliament. These cover a wide range of subjects, from the management of health and safety, control of asbestos at work, diving, ionising radiation and working at height. See Legislation enforced by HSE for more details. Most of this secondary legislation, which often originates from European Directives, is relevant to offshore health and safety.

The Health and Safety At Work etc. Act 1974 places general duties on all employers to ensure, so far as is reasonably practicable, the health and safety of their employees and of others who might be affected by their undertaking (HSW Act, sections 2, 3 and 4). These general duties are supplemented by Management of Health and Safety at Work Regulations which contain requirements on risk assessments, health and safety arrangements, health surveillance, providing competent persons and the co-operation and co-ordination of health and safety activities between different employers and the self-employed.

The Management and Administration Regulations (MHSWR) add to this legislation some more detailed requirements for the management of offshore operations. In particular, they identify cases where it is necessary to put duties on a single duty holder in control of an offshore installation (the owner or operator), supported by a general duty of co-operation, rather than on employers in general. However, the HSW Act and MHSWR duties continue to apply to all offshore employers.

In general this additional legislation covers the general occupational health, safety and
13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response: The UK has implemented Directive 92/91/EEC as part of a wider legislative framework (see our answer to Question 12).

Sources of evidence: HSE

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: The health and safety legislation in the UK focuses both on major accident hazards and on occupational health, safety and welfare. However, the UK’s legislation which is specific to the offshore oil and gas work activities, and which predominately implements Directive 92/91/EEC, is major accident hazard focused.

Sources of evidence: HSE

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response: A goal setting regime places the responsibility on those who create risks to demonstrate that they have adequately assessed the risks associated with their work activities and put in place appropriate measures to control these risks. It has the flexibility to require operators to consider new standards or best practice as they emerge and to drive them to continually improve.

Goal setting regimes place the onus on the industry to ensure and demonstrate to regulators that the risks of an incident relating to oil and gas operations are reduced to ‘as low as reasonably practicable’. The regime ensures flexibility in operational matters to meet the unique nature of differing projects, and avoids a ‘lowest common denominator’ approach to regulation that can be observed in a prescriptive regime.

An important feature of objective-based regulation is that it encourages continuous improvement rather than a compliance mentality. It encourages the creator of the risk to move beyond minimum standards in a continuous effort for improvement and not just accept the minimum standard. The risk of specific standards is that they can shift the burden of responsibility from the operator to the government and stifle innovation. Prescriptive based regulation focuses on minimum compliance, requires frequent amendment and relies heavily on the ability of legislative drafters to understand and anticipate the risks and operational environment of the industry.

Sources of evidence: HSE

16. To what extent does the legislation in your country focus on “operational procedures” as a (primary) means to achieving safety & health management relative to “hazard protection”?

Response: The UK’s goal setting legislation is focused on ensuring that health and safety risks are effectively assessed and then managed by duty holders, including adopting current good practise, to reduce risks to as low as is reasonably practicable. This regime is focused on

Sources of evidence: HSE
risk assessment and management rather than focused on technical standards and procedures.

17. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:  
The UK feels that the requirements in all UK health and safety legislation help to generate an appropriate safety culture. We also recognise the important role that the workforce and their representatives have in ensuring that occupational health and safety and major hazard risks are assessed and then effectively managed. To this goal the UK has the Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989. These regulations cover requirements related to consulting and informing workforce representatives and on the responsibilities and powers of safety representatives.

Safety culture cannot be achieved by regulation alone. HSE has also been working with the industry and unions via Step Change and the Workforce Involvement Group (a working group of the Offshore Industry Advisory Committee) to identify additional measures that can be taken to further improve safety culture offshore. The Offshore Industries Advisory Committee’s Workforce Involvement Group have also initiated and completed a project to specifically assess the offshore industry’s compliance with the SI971, Offshore Installations (Safety Representatives and Safety Committees) Regulations 1989. Although there was general compliance with the safety representative regulations, the Project Team also collected examples of best practice that can be shared to raise standards and engagement activities across the industry and the offshore workforce and made recommendations aimed at improving safety representative training.

In the UK we use a range on non-legislative approaches (e.g. safety representative events, websites etc.) to work with industry and the Unions to share good practice that will help to build and support safety culture.

Sources of evidence:  
HSE

18. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:  
There are no public bodies acting as operators of offshore oil and gas installations in the UK.

Sources of evidence:  
HSE

19. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:  
HSE’s guidance on our regulations is free and easily obtainable by all sectors of industry via HSE’s website. HSE also produces a range of leaflets that are aimed and small businesses (e.g. regulating health and safety in the UK offshore oil and gas fields - which does what?). In addition, the recently updated offshore oil and gas industry pages on HSE's website provide easy access to further free information such as:

- Operational Notices: advise the offshore industry of new regulatory requirements,

Sources of evidence:  
HSE
contact points within the Offshore Division for communications (e.g. accident/incident reporting) and of other government requirements with respect to offshore operations which may have safety implications;

- Safety Alerts: a mechanism for urgent notifications to industry, and normally used to make the interim findings of accident investigations known where urgent action may be required;

- Safety Notices: highlight matters of concern in generic safety issues, which inspectors have identified and forewarn sector duty holders of potential dangers. In the main, they deal with hardware-related issues, hazards and controls; and

- Offshore Information Sheets: good practice guidance on a range of technical issues.

As we discussed at the interview the UK has also undertaken, and published the results of, our work on key programmes (KP1 – KP4). Details of each KP are on our website, and help to highlight specific issues with industry, determine whole well industry is performing and put a focus on adopting current good practice in these areas. I highlighted that KP4 was focused on ageing and life extension. The aim of the Ageing and Life Extension Inspection Programme is to ensure that the risks associated with ageing and life extension are controlled effectively by the offshore industry.

Step Change in Safety was launched in September 1997 in recognition that progress in reducing accidents and injuries in the UKCS had begun to plateau. Unique at the time of the launch was that Industry leaders, representatives from trade associations, trade unions and the government regulator agreed that enhanced co-operation between all was the way forward. A commitment was made to work in partnership, to share safety information and good practice to secure a step change in the UK’s offshore safety performance. Oil & Gas UK is the leading representative body for the UK offshore oil and gas industry. It is a not-for-profit organisation, established in April 2007 on the foundations of the UK Offshore Operators Association (UKOOA) and incorporating the contractor companies who were members of the now disbanded Industry Leadership Team. There are currently 60 members. Both of these organisations, and individual companies, also produce a range of guidance. Industry has reported to HSE that such information helps them to better manage health and safety.

V.31.5 Scope

20. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

The health and safety legislation in the UK focuses both on major accident hazards (the special hazards associated with oil and gas exploration and exploitation) and on occupational health and safety. However, the UK’s legislation which is specific to the offshore oil and gas work activities, and which predominately implements Directive 92/91/EEC, is major accident hazard focused.

UK offshore oil and gas legislation requires hazards encountered during normal routine operations to be assessed, as well as those that could arise during critical situations, as a result of a major accident (e.g. fire and explosion and escape and rescue).

Sources of evidence:

HSE
21. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

**Response:**

The whole life cycle of the drilling and well operation is covered through well design, modified, commissioned, construction, equipped, operated, maintained, suspended and abandoned. Our legislation does not cover any mobile drilling unit when it is in vessel mode.

**Sources of evidence:**

HSE

22. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

**Response:**

The whole life cycle of the production process is covered through design, construction, operation, maintenance and decommissioning and dismantling. Our legislation does not cover any unit in its vessel mode.

**Sources of evidence:**

HSE

23. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

**Response:**

Our legislation would cover shale gas and oil activities, and any associated fracking, as these are hydrocarbon extraction activities. Hydrocarbon gas storage in depleted oil and gas formations is also covered by our oil and gas legislation.

**Sources of evidence:**

HSE

24. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO2 capture and storage)?

**Response:**

Although hydrocarbon gas storage in depleted oil and gas formations is covered by our oil and gas legislation, hydrocarbon gas storage in geological formations that do not contain petroleum is not covered by our oil and gas specific legislation. There is also doubt if underground coal gasification is covered by our oil and gas legislation as the gas produced may not be a mineral.

**Sources of evidence:**

HSE

25. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

**Response:**

See the answer to Question 2 in the Annex 1, particularly the definition of offshore installation.

**Sources of evidence:**

HSE
26. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response: 
See the answer to Question 2 in the Annex 1.

Sources of evidence: HSE

27. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   
a. What is the definition in the relevant legislation?
   
b. How do stakeholders understand this criterion?

Response: 
We call these material changes. A material change is likely to be one that changes the basis on which the original safety case was accepted. This would involve changes to the basis on which risk control decisions are made or which necessitate a review of the adequacy of major hazard control measures. It includes both physical modifications and operational management changes of sufficient significance.

Sources of evidence: HSE

28. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and/or subject to independent/peer review? If so, how is this achieved?

Response: 
As discussed during the interview we expect operators to have an appropriate health and safety management system in place, which includes appropriate monitoring and review. In addition from the regulator side we have the acceptance of the safety case, processes for the regulator to consider material changes to the safety case and the outcomes of thorough reviews of the safety case. There is also additional oversight via inspection and investigation. Finally, we have our independent verification schemes and well examination.

Sources of evidence: HSE

29. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and/or other independent party? If so, how is this achieved?

Response: 
Yes the information in health and safety document (the safety case in the UK) is assessed. HSE assesses all safety cases and must accept the operator’s safety case before offshore oil and gas operations can commence. The regulator also considers material changes to the safety case and the outcomes of thorough reviews of the safety case.

Sources of evidence: HSE

30. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response: 
It will cover those involved in rescue and recovery that are associated with the offshore installation. If other vessels get involved, depending on the specific circumstances, these may not be covered (e.g. a ship coming to support any rescue may be covered by maritime safety legislation).

Sources of evidence: HSE
31. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:

There are gender requirements as specified by the directive (e.g. separate sleeping and shower rooms). On persons with a disability, the HSWA covers all workers and the UK also has general disability employment related legislation in the UK.

Sources of evidence:

HSE

V.31.6 Enforcement

32. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

The Health & Safety Executive’s Offshore Division (OSD) is responsible for enforcing the national legislation in the UK. OSD is organised into Inspection Management Teams (IMTs) and Topic Specialist Teams (covering specific technical disciplines). Offshore Dutyholders are allocated to the IMTs who are responsible for the planning and delivery of assessment, inspection, investigation, enforcement and advisory programmes. The Topic Specialists work with the IMTs on programme delivery and have projects of their own to manage and deliver.

Under national legislation HSE / OSD have formal powers of enforcement. These include: Improvement and Prohibition Notices which respectively require improvements to be made within a required time period and prohibit specified activities until inadequacies are remedied.

Enforcement differs for onshore and CCS activities. Different legislation is involved and there are also different inspection teams involved.

Sources of evidence:

HSE

33. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

Lagging Indicators of personal injury accidents and hydrocarbon releases are utilised to indicate the success or otherwise of the regulatory approach. These are published annually in the HSE Statistics Bulletin. These suggest the UK regime is robust and effective.

Sources of evidence:

HSE

34. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

All of the employer of the enforcement officer, the helicopter operating company and the offshore duty holder are responsible for the safety of the officer when travelling offshore.

While an officer is offshore, the duty holder and employer will have responsibility for their safety.

Sources of evidence:

HSE
### V.31.7 Effectiveness

35. What impact does the regulatory approach in your country have on safety and health protection?

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<th>Response:</th>
<th>Sources of evidence:</th>
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<tr>
<td>The reduced number of incidents since Piper Alpha indicates that it has had a positive impact. See the following statistics:</td>
<td>HSE</td>
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</table>

36. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

| a. | How successful (in your opinion) is the implementation of the relevant legislation in your country? |
| b. | What (if any) objective measures are available to show its effectiveness? |
| c. | Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe). |

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<tr>
<td>Practical implementation of the directive in the UK remains robust, supported by a strong regulator, helpful free guidance and industry/regulator/Union for a to discuss issues develop good practice and promote compliance. This statement is support by the fact that the EC has decided to largely base its offshore oil and gas proposals on the UK regime, indicates that they see the UK regime as a benchmark for others. The UK’s high standards have also been acknowledged by both the Energy and Climate Change Select Committee in their report into the implications of the Gulf of Mexico Oil Spill and in the Report of the US National Commission on the BP Deep-water Horizon Oil Spill and Offshore Drilling where it was recommended that the US safety regulations be expanded to be at least as stringent as those in the UK. And more recently, whilst making recommendations on how the UK can take things further the report from the independently chaired regulatory review (Maitland Review) recognised the positive aspects of the UK regime. It cited in particular:</td>
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<td>• The stringent assessment of environmental impacts;</td>
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<td>• A safety system that requires industry to identify hazards, assess the risks and follow best practise to manage them; and</td>
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<td>• The comprehensive emergency response framework.</td>
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<td>These reviews support the UK view that the UK’s regime is robust and appropriate. However, we must not be complacent, and we will continue to consider the lessons from the ongoing investigations and reviews following the Gulf of Mexico incident and the offshore oil and gas proposals emerging from Europe and recent Parliamentary Select Committee and other independent reviews of the UK system following the Deep-water Horizon incident. The UK would rate our regime as a 9, recognising that there are areas where we can improve (e.g. working with other regulators and information sharing).</td>
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37. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

| a. | Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive? |
| b. | Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect). |

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<td>HSE</td>
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c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:

The UK’s offshore health and safety regime was developed prior to the introduction of Directive 92/91/EEC on minimum requirements for improving the safety and health protection of workers. Directive 92/91/EEC sets a lower standard than the UK’s Offshore Safety Case Regulations (SCR), and other relevant offshore legislation. Therefore we feel that the Directive has had no influence on the UK’s current regime.

Following the Deep-water Horizon incident in the Gulf of Mexico, the EC has considered the adequacy of EU and Member State legislation of offshore oil and gas extraction. They have concluded that improvements are needed, and have published draft proposals to improve the standard of regulation. This suggests that the Directive has not been effective in delivering its aim. For this reason we feel that we can only rate the effectiveness of the Directive at promoting standards in the UK as 2, and about 5 across Europe.

Sources of evidence:

HSE

38. Please mention any other relevant issues from the practical application of the relevant legislation:

a. Any notable difficulties in the practical application?

b. Any unexpected positive effects?

c. Any unintended (or unexpected) negative effects?

d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?

e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:

Practical implementation of the directive in the UK remains robust, supported by a strong regulator; helpful free guidance and industry/regulator/Union forum to discuss issues develop good practice and promote compliance. This statement is support by the fact the EC has based its new offshore oil and gas proposals on the UK regime, and recent Parliamentary Select Committee and other independent reviews of the UK system following the deep-water Horizon incident.

As well as the detailed observations on Directive 92/91/EEC outlined in Annex 1, to be useful longer-term, the EC should consider the scope of the Directive. The European Commission should be consider extending directive to cover the storage of hydrocarbon gas, as well as its extraction. The Commission could also clarify that the current directive covers shale gas extraction and underground coal gasification. The definition of a mineral may also need clarification. For example, is the gas from underground coal gasification or salt a mineral under the directive?

Sources of evidence:

HSE
V.31.8 Evaluation

39. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:

The UK feels that the UK legislation is adequate from a general health, safety and welfare perspective as well as in relation to adequately addressing offshore oil and gas extraction. However, we are not complacent, and recognise the need to learn from incidents and other regulatory regimes (e.g. SEVESO). We do think that some of the additional requirements suggested by the Commission (e.g. relating to setting up a competent authority and information sharing and transparency) could add value.

In addition, the UK’s suite of offshore health and safety legislation needs to be updated to ensure that all aspects of hydrocarbon gas storing, including in geological formations that do not include petroleum, are adequately covered by the legislation. Longer-term, if Carbon Dioxide storage was seen as a work activity with major hazard potential, we may have to update our offshore Regulations to cover this activity.

Sources of evidence:

HSE

40. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:

I mentioned at the interview that the NSOAF EU Working Group had been considering the improvements that could be made to Directive 92/91/EEC for over a year. The main issues identified, as well as a few UK specific points, are outlined below:

- The directive is not as clear at explaining the health and safety responsibilities of the key players offshore (e.g. Licensee, installation operator, well operator and other contractors). As the directive only refers to the employer, the role of each of these players is not clear (e.g. does every employer on an installation needs to produce a health and safety document, or is this requirement only on the main employer).
- Practically, it creates gaps in the regulation of oil and gas major hazards as it only covers extraction and not storage.
- The role of the licensee, who often appoints the person in control of the offshore installation, is important. They should be required to appoint someone who is

Sources of evidence:

HSE
competent; that they also provide appropriate resources for them to deliver their health and safety roles and responsibilities; and monitor the capability of operators and their ability to discharge their responsibilities.

- It is up to industry to effectively manage, and control the offshore risks to health and safety they create, but Member States need to put in place a strong, well resources regulator, to enforce compliance. This includes putting in place effective proactive (e.g. assessing proposals first before operators drill) and reactive measures to regulate their offshore oil and gas industry. Such a regulator is in place in the UK, but this is not always the case in other Member States. Perhaps it should be required in the directive? It is also important to consider requirements which are essential for the regulator to be effective (e.g. notification of appropriate information and transport offshore).

- The UK feels strongly that operators should not start drilling operations until they have demonstrated to the regulator: that they identified and assessed the risks and are taking appropriate steps to control them; and will comply with relevant safety legislation. The UK also thought operators should be required to provide information to the regulator (e.g. a notification or a health and safety document) to allow the regulator to intervene early and to pro-active assess this information. None of these areas are covered by the directive.

- The directive contains a general maintenance requirement in Article 3.1(a), which indicates that workplaces (which could include the installation) should be maintained. The more detailed maintenance section in the annex to the directive (Part A 4.1 and 4.2) appears to only cover the maintenance of plant and equipment, including safety equipment. Although maintenance of the asset may be covered by Article 3.1(a), this is a growing area of importance and this requirement should be made a lot clearer.

- Directive 92/91/EEC indicates in the Annex (Part C 1.2) that the employer shall observe the procedures and arrangements laid down in the Health and Safety Document during the planning and implementation of the relevant stages covered by the directive. There is also a statement on implementation in the Framework Directive (Article 6 (2)). The directive could benefit from the inclusion in Directive 92/91/EEC of a clearer statement indicating that the requirements in the health and safety document should be implemented using appropriate means, structures and management systems (including follow up and review).

- It could be clearer on the need for, and scope of, an emergency response plan (rather than just fire protection plan).

- The directive should have a requirement to review the Health and Safety Document regularly; this approach would be in line with good practice in terms of health and safety management. Without such a requirement the document will quickly become out of date.

- The directive does not appear to cover the whole life cycle of the installation. For example 3.1(a) covers design construction, operation, major modification and maintenance, but does not cover decommissioning, dismantling and deconstruction.

- The directive does not cover the full well life cycle (e.g. design, construction, control and well integrity management). The directive only requires that suitable well control equipment, like a blowout preventer, is provided. The early lessons from Deepwater Horizon indicate well integrity issues are crucial to avoiding major accidents. The UK argues that as well design, integrity and control failures played such an important part in the Montara and Macondo blowouts, further assurance is needed that a well design, and its construction, was adequate. It was the UK’s experience, over the last 20 years since Piper Alpha, that having a statutory requirement for well operators to obtain a check of the design and construction of the well by an independent competent person (a wells examiner) was an important step to require the operator to take to ensure the well is fit for purpose, and for the regulator to gain additional assurance. The UK notes that
the EC is proposing this within its proposed offshore Regulation. What about onshore wells? A requirement on the well operator to send in a weekly report of well related information to the regulator when undertaking wells operations is another essential requirement to consider adding.

- The more detailed maintenance section in the Annex to the directive (Part A 4.1 and 4.2) covers the maintenance of plant and equipment, including safety critical equipment (SCE). Due to the importance of the effective maintenance of SCE in preventing major hazards (recently emphasised by the lessons from the Deepwater Horizon incident), the UK argues that additional requirements are need to require independent verification of SCE, to ensure they are capable of meeting defined performance standards. The UK notes that the EC is proposing this within its proposed offshore Regulation.

- The current requirement in the directive on offshore accommodation does not make it clear to industry and the regulator what is required. Perhaps this requirements would be clearer if there was a link between the directive’s accommodation requirement and health and safety (e.g. to minimise the effect that sleep deprivation has on health and safety). The UK would like to see the directive clearly stating that only one person could sleep in a cabin at any one time, with no more than 2 beds per cabin when workers were separated by shift.

- The UK feels that the annex to the directive could be improved by removing some of the duplication and when appropriate using more consistent wording. The UK also noted that if the requirements in the annex to Directive 92/91/EEC were compared with the main articles of the Directive 92/91/EEC (and in some cases the Framework Directive) there was also duplication. The annex to the directive covers occupational safety as well as major hazard control requirements. If the requirements related to these two areas were separated out, this might make it easier for industry and regulators to understand what is required. This step may also make it easier for the EC to explain the overlap between this directive and its proposed European Regulation on oil and gas and how they will work together. The annex to Directive 92/91/EEC also could be improved by moving from three annexes to two that covered all the requirements for onshore and offshore drilling separately. Alternatively, a single table could be produced which cleared outlined all the requirements, highlighting when they applied (e.g. solely to offshore or onshore or to both). Steps could also be taken to clearly group together and mark occupational safety or major hazard requirements.

- As mentioned above there are overlaps with the framework directive in a range of areas. In addition there is overlap with health surveillance and workforce training and sharing information.

- There are also significant overlap with the EC’s proposed Regulation on offshore oil and gas. To ensure that duty holders and regulator are clear on what is expected, such overlap must be reduced.

41. What would be the cumulative effect of the changes you have proposed to the directive?

- What would be the cumulative effect of the changes?
- Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
- Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
Response:

For the UK, the changes we propose would have minimal impact as we do most of these already. So the impact would be 2 (some changes on accommodation and scope may help the UK).

For Europe, the cumulative impact of the changes suggested to Directive 92/91/EEC in relation to offshore oil and gas would be small as most of the amendments we suggest would be included in the EC’s proposed new regulation. There would be some greater clarity in terms of: managing the overlap with the proposed European Regulation; the scope of the directive; the role of the regulator; maintenance of the installation and safety critical elements; covering the whole well life cycle; accommodation requirements etc. It would move it up to a 4.

To have its greatest impact, the work needs to consider which of the changes proposed are also relevant to onshore oil and gas extraction (and storage). If these are included in the Directive, it could increase the effectiveness in relation to onshore oil and gas significantly (e.g. up to a 7).

V.31.9 Administrative burden

42. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:

It has been calculated that the overall cost to industry from complying with the UK offshore health and regulations (that go beyond the HSWA) is between £185.8 million and £457.3 million each year. A best estimate as to the annual cost of complying with the offshore regulations is £324.1 million. This is in addition to the £13.8 million that is cost recovered from industry every year by HSE. Therefore, taking the total annual costs of complying with the offshore major hazard regulatory regime to the offshore oil and gas industry to between £199.5 million and £471 million, with a best estimate of £337.9 million.

The estimates for the total one-off sunk costs that the industry has incurred for those installations currently in service in UK waters since the relevant regulations came into force is between £198 million and £1,044 million, with a best estimate of £604.8 million. It should be noted that this does not include the potentially large cost of upgrading 4 bed cabins to 2 bed cabins as required in the Offshore Installations and Wells (Design and Construction) Regulations 1996. This also does not include any recurring costs that have already been incurred, for example 5 year reviews of safety cases that have been submitted in the past.

Finally, there is a future cost that will be incurred at an unknown date of between £2.5 and £7 million in current prices, with a best estimate of £3.3 million for 4 bed cabins that need upgrading to 2 bed cabins as required by the Offshore Installations and Wells (Design and Construction) Regulations 1996.

43. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.

b. How can the burden be minimised?

c. Can existing systems cope with the extra requirements?

Response:

Minimal, as most of what is suggested is likely to be placed in the proposed offshore oil and gas regulation, rather than the directive. It depends on what extra requirements, beyond those already encompassed by the scope of the Framework Directive, will be added.

Some of the general requirements proposed (like review the health and safety document) may be appropriate to both onshore, but it may be difficult to assess how much of some of the proposed requirements is already partly covered by the existing directive (this is a legal judgement). In addition, it will need to be determined which of the requirements in the proposed new offshore regulation may be seen as relevant for onshore (e.g. well examinations).

If we assume none of the proposed requirements will be included in the new offshore oil and gas Regulation, and take account of the issues already covered by the directive (e.g. prepare a health and safety document, first aid etc.), then we anticipate the cost of implementing these will be about 1 million a year per installation.

Sources of evidence:
HSE

V.31.10 Future regulatory approach

44. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

The selection of a regulation, rather than a directive, to implement the EC new offshore oil and gas proposals could have a range of consequences for the UK:

- The confusion caused by changing our existing system could seriously risk undermining the existing high safety and environmental standards currently in place on the UK continental shelf. A new system could distract both industry and regulators from the key objective of maintaining and improving the management and control of safety and environmental risks in a mature sector with ageing infrastructure;

- The UK would be required to make significant amendments to current established legislation, associated guidance and industry documentation. This would be costly and time-consuming for industry and it is their view that there would be no substantive benefit in terms of achieving the objectives of the proposal. Early estimates indicate that it could cost the UK industry about £18 million, based purely on changing guidance, procedures and documentation. This is five times more than estimates of what it would cost if the proposal was a directive;

- If new Major Hazard Reports are required to be produced to replace existing safety cases for the UK’s 293 offshore installations, it is estimated that these will cost industry £146 million. If the existing regime remained, and existing safety cases only had to be

Sources of evidence:
HSE
updated to include material changes, this could be about £29.3 million;

- It is also possible that the existing design, well and combined operations notifications will also have to be resubmitted to comply with the new regime. This will cost industry over £12 million. Again, if the SCR remained, it is estimated that existing UK notifications would need minimal work to comply with the new requirements;

- If existing UK verification schemes (including well examination schemes) had to be reintroduced to meet the requirements of the new regime, it is estimated that this would cost industry £61 million. If the SCR and other UK domestic requirements remained, it is likely that most of these schemes could remain in place; and

- There will also be opportunity costs to HSE. The repeal of SCR would mean that the approximately 300 currently accepted UK Safety cases under SCR, would have to be replaced by new Major Hazard Reports (MHR) under the proposed Commission Regulation, all requiring full assessment/acceptance from scratch by offshore specialists from HSE’s Offshore Division (OSD) – rough estimates are that this could take up virtually all of OSD’s specialist inspector resource for one year. Processing well notifications is estimated to involve one OSD inspector year, and design notifications significantly more. All this could only be done by very significantly reducing OSD’s offshore inspection and investigation presence, and stopping the range of OSD’s stakeholder engagement activities, until this rump of “re-work” was completed – a very significant withdrawal of regulator cover for an extensive period. However, this could be largely avoided by introducing appropriate transitional arrangements into the proposed regulation.

These consequences could be avoided if a directive was selected as the implementation tool. This would give Member States the flexibility to build new requirements into existing regimes that already mirror large aspects of the EC’s new proposals.

45. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

A well worded directive would be just as effective as a minimum requirement regulation for helping immature Member States effectively Regulate offshore oil and gas. Indeed, the process of working with industry and unions to implement a directive, and produce supporting guidance, will do more to help develop understanding of the requirements and the roles of the regulator and duty holders.

Having industry buy-in to the proposed way forward is also an essential element of an effective regulatory regime, and currently industry and unions favour a Directive.

There will be some consistency issues with both, which are mainly the result of the instruments being selected only outlining minimum requirements. Some Member States will always do more than is in the directive and regulation.

The implementation time for both instruments (once appropriate transitional arrangements are in place) will be similar.

Sources of evidence: HSE
46. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

It is not the instrument, but the requirements within it that will ensure that the risks are effectively assessed and managed. The requirements within the UK legislation have been effective at dealing with offshore oil and gas extraction in extreme environments. The goal setting legislation we have ensures that industry continually improves and adopts the current good practice, including that associated with extreme environments. If the directive was updated as suggested, it would be suitable for all environments. The current directive is equally ineffective for all environmental conditions.

Sources of evidence:
HSE

47. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?

b. What options are used in your country?

Response:

Please see response to Question 40 for our views on the difficulties in practically implementing Directive 92/91/EEC and how it can be improved.

Sources of evidence:
HSE

V.31.11 Other issues

48. Please add any other comments that you consider relevant to the objectives of the study.

Response:

If the EU had not adopted a minimum requirement Directive with such a low baseline of standards, would standards across Europe, especially for immature regimes, not be higher? Are there not lessons for the EC to learn from their experience of Directive 92/91 that can be taken on board when producing their new offshore oil and gas proposals? For example, they should not be resistant to including new requirements into their offshore oil and gas proposals if the evidence and experience of mature regimes is that the requirements proposed are essential to the effective regulation of offshore oil and gas. Perhaps a good practice approach is better than a minimum standard approach.

Sources of evidence:
HSE

V.31.12 Attached Information
ANNEX 1

Detailed UK responses to the DNV Review of Directive 92/91/EEC

Question 2. What is the current scope/boundaries of the Directive 92/91/EEC legislation in your country?

a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?

As we discussed at the interview, the UK’s offshore oil and gas Regulations, which address major accident hazard issues, refer to primary duty holder (the operator, in the case of a fixed installation, and the owner, in the case of a mobile installation) who is responsible for discharging the duties under the Regulations. The well operator is the duty holder for some well specific requirements and there are also requirements placed on the licensee. These duty holders are all defined within the legislation.

In regards to occupational health and safety, the Health and Safety at Work etc Act 1974 (HSWA) places duties on the employers to ensure the health, safety and welfare of their employees and others who may be affected by their undertaking (e.g. sub-contractors and the public). As we discussed the HSWA also covers the self-employed, they have to meet the requirements placed on the employer and employee.

b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?

All offshore work activities that are outlined in the Health and Safety at Work Act 1974 (Application Outside Great Britain) Order 2001 are within scope of the HSWA. If the activity is not covered by the scope of the HSWA the individuals involved in work activities will not be duty holders within the UK’s health and safety legislation (e.g. a vessel under navigation or a helicopter in flight). Such activities are covered by other regulators (e.g. CAA and MCA). Where there are grey areas of overlap of jurisdiction MOU are used to clarify responsibilities.

The offshore oil and gas work activities that come within the UK offshore health and safety regime fall within the definition of an offshore installation. This is defined as:

“(1) Subject to the provisions of this regulation, in these Regulations the expression “offshore installation” means a structure which is, or is to be, or has been used, while standing or stationed in relevant waters, or on the foreshore or other land intermittently covered with water -
(a) for the exploitation, or exploration with a view to exploitation, of mineral resources by means of a well;
(b) for the storage of gas in or under the shore or bed of relevant waters or the recovery of gas so stored;
(c) for the conveyance of things by means of a pipe; or
(d) mainly for the provision of accommodation for persons who work on or from a structure falling within any of the provisions of this paragraph, together with any supplementary unit which is ordinarily connected to it or any part of it (including those parts described in paragraph (3) below) and all of the connections.

(2) Any reference in paragraph (1) to a structure or unit does not include -
(a) a structure which is connected with dry land by a permanent structure providing access at all times and for all purposes;
(b) a well;
(c) a structure or device which does not project above the sea at any state of the tide;
(d) a structure which has ceased to be used for any of the purposes specified in paragraph (1), and has since been used for a purpose not so specified;
(e) a mobile structure which has been taken out of use and is not yet being moved with a view to its being used for any of the purposes specified in paragraph (1); and
(f) any part of a pipeline.

(3) For the purposes of these Regulations there shall be deemed to be part of an offshore installation -
(a) any well for the time being connected to it by pipe or cable;
(b) such part of any pipeline connected to it as is within 500 metres of any part of its main structure;
(c) any apparatus or works which are situated -
   (i) on or affixed to its main structure; or
   (ii) wholly or partly within 500 metres of any part of its main structure and associated with a pipe or system of pipes connected to any part of that installation.

(4) where two or more structures are, or are to be, connected permanently above the sea at high tide they shall for the purposes of these regulations be deemed to comprise a single offshore installation.”
c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?

The whole life cycle of the drilling and well operation is covered through well design, modified, commissioned, construction, equipped, operated, maintained, suspended and abandoned. Our legislation does not cover any mobile drilling unit when it is in vessel mode.

The whole life cycle of the production process is covered through design, construction, operation, maintenance and decommissioning and dismantling. Our legislation does not cover any unit in its vessel mode.

d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

Our legislation covers shale gas and oil activities, and any associated fracking, as these are hydrocarbon extraction activities. Hydrocarbon gas storage in depleted oil and gas formations is also covered by our oil and gas legislation.

Although hydrocarbon gas storage in depleted oil and gas formations is covered by our oil and gas legislation, hydrocarbon gas storage in geological formations that do not contain petroleum is not covered by our oil and gas specific legislation. There is also doubt if underground coal gasification is covered by our oil and gas legislation as the gas produced may not be a mineral.

2.4 Regulatory approach

Question 13. How has Directive 92/91/EEC been interpreted in your country?

a. What is the legislation that transposes the directive in your country?

b. Please provide a brief summary of how the directive has been transposed.

The UK has implemented Directive 92/91/ECC via the following Regulations:

- The Offshore Installations (Safety Case) Regulations 1992 and 2005 - their primary aim was to reduce the risk from major accident hazards to the health and safety of the workforce employed on offshore installations or in connected activities. They required every operator, or owner, of an offshore installation to prepare a safety and health document (safety case) and submit it to HSE for acceptance. This will cover the principles of risk prevention, the assessment of risks and the preventative and protective measures selected. Operators are also required to set up a verification scheme and seek input from independent competent person;
- The Offshore Installations and Pipeline Works (Management and Administration) Regulations 1995 - these set out requirements for the safe management of offshore installations, such as the appointment of
installation managers, the use of permit-to-work systems, health surveillance and;

- The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995 - these provide for the protection of people from fire and explosion, and for securing effective emergency response. They require the necessary assessment of risks and the introduction of appropriate control measures to address these risks;
- The Offshore Installations and Wells (Design and Construction, etc) Regulations 1996 - these set out requirements for the integrity of installations, the safety of offshore and onshore wells, and the safety and welfare of workers offshore. They require the necessary assessment of risks and the introduction of appropriate control measures to address these risks; and
- Onshore, the Borehole Sites and Operations Regulations 1995 came into force in 1995. The regulations implemented requirements in the Directive, not already covered by the offshore regulations. These include the production of an onshore health and safety document.
- Offshore Installations (Safety Representatives and safety Committees) Regulations 1989. These regulations cover requirements related to consulting and informing workforce representatives and on the responsibilities and powers of safety representatives.
- Offshore Installations and Pipeline Works (First-aid) Regulations 1989. These Regulations outline the offshore first aid and basic health care provision requirements.

c. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

The UK offshore health and safety regulations introduced after the Piper Alpha incident require a range of additional measures that the EU did not adopt when it introduced Directive 92/91. These are too numerous to mention in detail, but they include:

- **Health and Safety Document (Safety Case) acceptance and review** - The UK offshore safety case regime requires every drilling rig and offshore production platform to have a Safety Case that is accepted by HSE before operations commence. Although Directive 92/91 has the requirement for a “health and safety document” which is broadly similar in scope, it does not require the relevant Member State regulator to assess the suitability of this document and the systems it describes. We find the assessment/acceptance work that we undertake to be an essential element of an effective safety case regime. Similarly, we require operators to keep their Safety Case “up to date”, to seek further approval when significant changes are made, and to undertake a more formal thorough review of the document every 5 years, all areas on which Directive 92/91 is silent. These additional requirements help to ensure that the
Safety Case becomes a living document, and one that forms a central part of an operator’s safety management system.

- **Notifications** - The UK regime requires offshore installations to send notifications to the regulator at appropriate times, over and above any Directive 92/91 requirements, including:
  - Well design and drilling information to be notified at least 21 days prior to drilling or well intervention taking place;
  - Weekly reporting of well related information when undertaking offshore drilling and wells operations;
  - Notification of early design details for production installations;
  - Notification of combined operations;
  - Notification of entry into waters and relocation.
  - Notification of a variety of “dangerous occurrences” relating to well and platform incidents that could affect safety integrity, such as leaks of hydrocarbons.

Such notifications allow early intervention by regulators when necessary.

- **Independent Verification** - The UK has, uniquely, a system of independent evaluation of key offshore systems:
  - Regular independent verification by bodies such as DNV, Lloyds Register, BV etc that safety critical equipment offshore, such as blow out preventers, is capable of meeting defined performance standards; and
  - A statutory requirement for well operators to obtain a check of the design and construction of the well by an independent competent person (a wells examiner) to ensure it is fit for purpose.

This independent examination and verification provides extra assurance to both the operator and regulator.

- **The role of the Licensee** – It is the licensee who often appoints the person in control of the offshore installation. In the UK the licensee is required to:
  - appoint someone who is competent and they also provide appropriate resources for them to deliver their health and safety roles and responsibilities.
  - They are also required to monitor the capability of operators and their ability to discharge their responsibilities.

- **Transporting Inspectors Offshore** - The requirement to oversee compliance, including offshore inspections, is a critical part of regulators responsibilities. It is therefore essential that inspectors are transported offshore, accommodated offshore and provide with meals and other subsistence offshore. UK legislation places a duty on the operator to deliver these requirements, and a new article is proposed to incorporate this element.

- **Decommissioning and Dismantling** – UK legislation covers the whole life cycle of the installation, including decommissioning, dismantling and deconstruction.
• **Full well life cycle (e.g. design, construction, control and well integrity management)** – UK legislation has requirements that ensure that the risks for the whole well life cycle are assessed and appropriate controls put in place. Without this key issues, like well design, will not be addressed by the operator or regulator. The early lessons from Deepwater Horizon indicate well integrity issues are crucial to avoiding major accidents.

• **Safety Representatives** – As well as ensuring workers are informed and consulted our regulations give powers and responsibilities to safety representatives to ensure that they play an active role in ensuring that offshore oil and gas major hazards are effectively managed.

d. What other legislation in your country is concerned with safety and health at work in mineral extraction through drilling?

The Health and Safety at Work etc Act 1974 (HSWA) is the primary piece of legislation covering occupational health and safety in the United Kingdom. The Health and Safety Executive is responsible for enforcing the Act and a number of other Acts and Statutory Instruments relevant to the working environment. The full text of the Act is available at the [UK legislation website](https://www.legislation.gov.uk).

Statutory instruments are the secondary types of legislation made under specific Acts of Parliament. These cover a wide range of subjects, from the management of health and safety, control of asbestos at work, diving, ionising radiation and working at height. See [Legislation enforced by HSE](https://www.hse.gov.uk) for more details. Most of this secondary legislation, which often originates from European Directives, is relevant to offshore health and safety.

The Health and Safety At Work etc Act 1974 places general duties on all employers to ensure, so far as is reasonably practicable, the health and safety of their employees and of others who might be affected by their undertaking (HSW Act, sections 2, 3 and 4). These general duties are supplemented by Management of Health and Safety at Work Regulations which contain requirements on risk assessments, health and safety arrangements, health surveillance, providing competent persons and the co-operation and co-ordination of health and safety activities between different employers and the self-employed.

The Management and Administration Regulations (MHSWR) add to this legislation some more detailed requirements for the management of offshore operations. In particular, they identify cases where it is necessary to put duties on a single duty holder in control of an offshore installation (the owner or operator), supported by a general duty of co-operation, rather than on employers in general. However, the HSW Act 8 and MHSWR 5 duties continue to apply to all offshore employers.

In general this additional legislation covers the general occupational health, safety and welfare requirements, for all workplaces, including offshore. However, the offshore major hazard requirements are addressed in the main offshore health and safety Regulations.
e. What (if any) aspects of safety and health do they address that are not addressed by the directive?

Article 3 of the Directive is very general and covers most work drilling related activities and the risks associated with them. The additional European health and safety Directives in place (e.g. the framework Directive and other health and safety Directives) provide further detail on specific procedures (e.g. risk assessment and risk management) or how specific risks should managed (e.g. manual handling or working at height).

In the UK, we have the HSWA which outlines the general duties on employers (e.g. to ensure the health, safety and welfare of all his employees). Then we have our offshore safety legislation, including the safety case regime, which are focused on ensuring that activities with major accident potential are assessed and effectively managed. We then have our Health and safety Management Regulations, and a range of health and safety regulations which are in place to ensure that occupational health and safety risks to workers and others are assessed and effectively managed.

Question 42. Are changes needed in Directive 92/91/EEC?

- Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
- Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
- Does the directive specify adequate minimum safety and health requirements?
- Is it consistently interpreted among the Member States?
- Is the directive free of other significant gaps?
- Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
- Otherwise, what changes are needed?

I mentioned at the interview that the NSOAF EU Working Group had been considering the improvements that could be made to Directive 92/91/EEC for over a year. The main issues identified, as well as a few UK specific points, are outlined below:

- The Directive is not as clear at explaining the health and safety responsibilities of the key players offshore (e.g. Licensee, installation operator, well operator and other contractors). As the Directive only refers to the employer, the role of each of these players is not clear (e.g. does every employer on an installation needs to produce a health and safety document, or is this requirement only on the main employer).
- Practically, it creates gaps in the regulation of oil and gas major hazards as it only covers extraction and not storage.
- The role of the licensee, who often appoints the person in control of the offshore installation, is important. They should be required to: appoint someone who is competent; that they also provide appropriate resources for them to deliver their health and safety roles and responsibilities; and monitor the capability of operators and their ability to discharge their responsibilities.
• It is up to industry to effectively manage, and control the offshore risks to health and safety they create, but Member States need to put in place a strong, well resources regulator, to enforce compliance. This includes putting in place effective proactive (e.g. assessing proposals first before operators drill) and reactive measures to regulate their offshore oil and gas industry. Such a regulator is in place in the UK, but this is not always the case in other member States. Perhaps it should be required in the Directive? It is also important to consider requirements which are essential for the regulator to be effective (e.g. notification of appropriate information and transport offshore).

• The UK feels strongly that operators should not start drilling operations until they have demonstrated to the regulator: that they identified and assessed the risks and are taking appropriate steps to control them; and will comply with relevant safety legislation. The UK also thought operators should be required to provide information to the regulator (e.g. a notification or a health and safety document) to allow the regulator to intervene early and to pro-active assess this information. None of these areas are covered by the Directive.

• The Directive contains a general maintenance requirement in Article 3.1(a), which indicates that workplaces (which could include the installation) should be maintained. The more detailed maintenance section in the Annex to the Directive (Part A 4.1 and 4.2) appears to only cover the maintenance of plant and equipment, including safety equipment. Although maintenance of the asset may be covered by Article 3.1(a), this is a growing area of importance and this requirement should be made a lot clearer.

• Directive 92/91 indicates in the Annex (Part C 1.2) that the employer shall observe the procedures and arrangements laid down in the Health and Safety Document during the planning and implementation of the relevant stages covered by the Directive. There is also a statement on implementation in the Framework Directive (Article 6 (2)). The Directive could benefit from the inclusion in Directive 92/91 of a clearer statement indicating that the requirements in the health and safety document should be implemented using appropriate means, structures and management systems (including follow up and review).

• It could be clearer on the need for, and scope of, an emergency response plan (rather than just fire protection plan).

• The Directive should have a requirement to review the Health and Safety Document regularly; this approach would be in line with good practice in terms of health and safety management. Without such a requirement the document will quickly become out of date.

• The Directive does not appear to cover the whole life cycle of the installation. For example 3.1(a) covers design construction, operation, major modification and maintenance, but does not cover decommissioning, dismantling and deconstruction.

• The Directive does not cover the full well life cycle (e.g. design, construction, control and well integrity management). The Directive only requires that suitable well control equipment, like a blow out preventer, is provided. The early lessons from Deepwater Horizon indicate well integrity issues are crucial to avoiding major accidents. The UK argues that as well design, integrity and
control failures played such an important part in the Montara and Macondo blowouts, further assurance is needed that a well design, and its construction, was adequate. It was the UK’s experience, over the last 20 years since Piper Alpha, that having a statutory requirement for well operators to obtain a check of the design and construction of the well by an independent competent person (a wells examiner) was an important step to require the operator to take to ensure the well is fit for purpose, and for the regulator to gain additional assurance. The UK notes that the EC is proposing this within its proposed offshore Regulation. What about onshore wells? A requirement on the well operator to send in a weekly report of well related information to the regulator when undertaking wells operations is another essential requirement to consider adding.

- The more detailed maintenance section in the Annex to the Directive (Part A 4.1 and 4.2) covers the maintenance of plant and equipment, including safety critical equipment (SCE). Due to the importance of the effective maintenance of SCE in preventing major hazards (recently emphasised by the lessons from the Deepwater Horizon incident), the UK argues that additional requirements are need to require independent verification of SCE, to ensure they are capable of meeting defined performance standards. The UK notes that the EC is proposing this within its proposed offshore Regulation.

- The current requirement in the Directive on offshore accommodation does not make it clear to industry and the regulator what is required. Perhaps this requirements would be clearer if there was a link between the Directive’s accommodation requirement and health and safety (e.g. to minimise the effect that sleep deprivation has on health and safety). The UK would like to see the Directive clearly stating that only one person could sleep in a cabin at any one time, with no more than 2 beds per cabin when workers were separated by shift.

- The UK feels that the Annex to the Directive could be improved by removing some of the duplication and when appropriate using more consistent wording. The UK also noted that if the requirements in the Annex to Directive 92/91 were compared with the main articles of the Directive 92/91 (and in some cases the Framework Directive) there was also duplication. The Annex to the Directive covers occupational safety as well as major hazard control requirements. If the requirements related to these two areas were separated out, this might make it easier for industry and regulators to understand what is required. This step may also make it easier for the EC to explain the overlap between this Directive and its proposed European Regulation on oil and gas and how they will work together. The Annex to Directive 92/91 also could be improved by moving from three Annexes to two that covered all the requirements for onshore and offshore drilling separately. Alternatively, a single table could be produced which cleared outlined all the requirements, highlighting when they applied (e.g. solely to offshore or onshore or to both). Steps could also be taken to clearly group together and mark occupational safety or major hazard requirements.
• As mentioned above there are overlaps with the framework directive in a range of areas. In addition there is overlap with health surveillance and workforce training and sharing information.
• There are also significant overlap with the EC’s proposed Regulation on offshore oil and gas. To ensure that duty holders and regulator are clear on what is expected, such overlap must be reduced.
V.32. NOTES FROM INTERVIEW WITH:

Industry
Oil and Gas UK

from

United Kingdom
V.32.1 Demographic Questions

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<td>Stakeholder type:</td>
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<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
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<td>EU/EEA country/counties in which your organisation operates:</td>
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V.32.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO$_2$ injection, CCS and fracking?

Response: N/A. Interview started at Question 6.

Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

Response: N/A. Interview started at Question 6.

Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

Response: N/A. Interview started at Question 6.

Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

Response: N/A. Interview started at Question 6.

Sources of evidence:
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Interview started at Question 6.

V.32.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.

Response: Data supplied in activity survey.

7. What is the balance of activity between offshore and onshore industries in your country?
   a. Proportions of exploration & development wells drilled onshore and offshore.
   b. Proportions of oil & gas production onshore and offshore.

Response: He stated that OGUK was solely offshore focussed; onshore is outside the scope of their constitution. Hence, he cannot provide an authoritative view.

8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: All private sectors.

9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?
   a. Trend (and number) of fatalities over the last 10 years.
   c. Number of injuries in the most recent year.
   d. Number of people employed.
   e. Please provide data sources (if available).

Response: a. He pointed us to the HSE statistics as a key data source. He stated the following:
   - Overall downward trend in LTI including fatalities (in HSE stats).
   - Oil and Gas UK have taken the accident stats out from the HSE figures for

Sources of evidence:
HSE accident stats (Robert to provide the said document)
Extractive Industries and drawn a comparison between the oil and gas sector with other industrial classifications. This shows that the upstream oil and gas industry compares favourably with other industrial sectors in terms of LTI, including retail and the public sector (banking and teaching are better).

- Some comparison exists between accident rates in the UK and Norway (done by the HSE in conjunction with the PSA. There was a need to align data due to the difference in reporting requirements). This shows that they are quite comparable; the observed differences are miniscule.

Moved on to discuss HCR's:

- Number of HCR releases across all groups (major, minor and significant) have gone down for a long time, but has plateaued in recent times. (NB that the data fluctuates randomly; and includes very small numbers. Two factors that make it particularly difficult to draw conclusions from).

- Step Change in Safety [SCiS] was set up in 1997 to drive the industry safety agenda: SCiS is now a subsidiary of Oil & Gas UK. SCiS membership is made from industry leaders, trade bodies, trades unions and the Regulator working collaboratively on the safety agenda. SC Leadership team meet for discussions bi-monthly. SCiS has a number of steering and work groups driving key safety issues.

- In 2010 it was recognised that the annual numbers of major and significant hydrocarbon releases had plateaued for several years. The leadership team decided that to drive a further HCR reduction initiative with a target to reduce all releases by 50% over three years (by April 2013) HCR’s are taken as a KPI for major accident/process safety and integrity. The SCiS priority is to half the number of hydrocarbon releases. A 32% has been achieved to date.

- Driven by the law in the UK which requires ALARP and thus acts as a constant challenge to reduce risks (with voluntary elements)? The law is seen as a key driver of behavioural change (a behavioural driver). The voluntary aspects in the current case include: wider engagement between various industry players, information sharing; learning from one another. Commented that information sharing can be difficult where adversarial/blame driven cultures exist such as in the US. The UK has limited experience of such issues and information sharing is seen to be a core element of risk management.

- As a result, Oil & Gas UK now reports HCR on their website (for the last six months) based on the raw accident data that is used to compile the HSE’s accident statistics. This data is not anonymised (and includes company name, installation, size, quantity, fluid, phase). Demonstrates an increased level of transparency in the UK offshore oil and gas industry. Key players in the UK North Sea list can be expected to be disproportionately represented on the list. This is not a direct reflection on them, but rather on the scale of their operations/numbers of installations.

- This data is further analysed (i.e. to account for difference in installations types, age etc.) and used to inform the safety agenda. Key to understanding why and how to achieve the goal of 50% reduction in HCR’s.

Summary

- Trends are reducing, releases are small.
- In the UK offshore oil and gas industry, learning, sharing and transparent culture is developing outside the regulatory apparatus, but is driven by the regulatory requirement to ensure that risks are ALARP.

In addition to HCR’s Oil and Gas UK has two other key KPI’s (leading indicators for major hazard performance).
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

Response:
- HCR’s
- SCE’s deployment (e.g., number of times BOP was operated. This dangerous occurrence which has to be reported to the HSE).

HSE will investigate all Major and Significant Releases. Internal investigations are conducted for all incidents as they are seen as learning opportunities. It is unknown as to the degree of rigour that will be applied (i.e., as for a full scale incident); although a general principle of proportionality is expected. Oil and Gas UK do not currently get detailed reports for these. The reports are not widely disseminated.

Sources of evidence:

11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?

Response:
Illness offshore is not prevalent. Some incidents of chicken pox, food poisoning and dermatitis (allergies to drilling fluids).

Sources of evidence:

V.32.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?

a. Please provide a brief summary of how the directive has been transposed (i.e., has the interpretative approach being “literal” or more focused towards meeting the overall intention?).

b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?

c. What (if any) aspects of safety and health do they address that are not addressed by the directive?
Response:

The implementation of the EID was a bit of a sideshow in UK. The Cullen recommendation pre-dated the EID by almost a year and was a key driver of the current legislative framework in the UK.

The implementation of the Cullen recommendations was key. The transposition of the EID was woven in to fit with the Cullen implementation. Lord Cullen saw the safety case as key and in particular its acceptance (i.e. the need for each operator to convince themselves and the regulator that there are measures and arrangements in places to manage the risks with the potential to cause a major accident). Hence the framework goes beyond the requirements of the EID. For example:

- Safety case acceptance;
- Well notifications (gives the regulator an opportunity to intervene. This is not an acceptance process);
- Weekly drilling reports which aim to show progress + indicate variations;
- Other notification’s (COMOPS, relocation);
- Verification requirements (2nd and 3rd party);
- Requirement to keep the safety case up to date;
- Periodic thorough review of each case and submission of a summary report of that review to HSE);
- consultation with safety reps in the development of the safety case;
- SC covers the whole lifecycle of the asset, from design through to demolition;
- Role/responsibilities of the licensee (usually a consortium has duties of responsibility which must be discharged), employee etc. is made more explicit;
- Links and clarifies the roles of all the key players;
- Implement the safety case, review and make changes (provided for marginally in the safety and health document).

The EID includes no provisions for how to set up the role of the regulator. For these systems to work, the role, responsibilities of the regulator have to be defined. Needs to include provisions on how to ensure a regulatory apparatus exists. Also needs to ensure provision is made to ensure Regulators have reasonable access to installations on demand.

The EID also needs to clearly and explicitly address lifecycle activities. Thinks the annexes to the EID could be improved by organising them thematically.

Specific additional question.

Do you feel that the directive has a different beginning and end point to the national legislation?

Answer not known. The central focus is on the national legislation. The national legislation covers the entire lifecycle of the asset, from design through to demolition.

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

Response:

Yes. It sits under the HSAWA act. It included specific major accident legislation (DCR, 

Sources of evidence:
14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

Response: 
Considers both to be equally important, but has a clear focus on MAH. The balance is on the MAH side, say 60/40 as a ratio.

Texas city reminded industry that driving down LTI (Occ. H & S) was not the way to address process safety issues. That is not to say that Occ. Health issues are trivial, but recognition that a focus on Occ health was not an effective strategy for managing process safety hazards to reduce risk.

Sources of evidence:

15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

Response: 
Principally goal-setting but with some prescriptive elements where consistency is a central requirement (say in the design and operation of emergency systems across various platforms – warning lights, alarms etc. to help with personnel moving between installations). The current balance is considered to be optimal.

The latest revision to the SC regulations (2005) helped to remove some prescriptive elements that were considered bureaucratic and had potential to stifle the safety agenda.

Sources of evidence:

16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:
- Step Change in Safety is key in this regard. Trade unions are involved (RMT and Unite) in the leadership team. Safety reps are involved in meetings.
- Safety reps regulations are also key (numbers, voting, training, the role and requirements). They have no powers per se, but can ask to investigate incidents, to carry out inspections, encouraged to be involved.
- The HSE runs the OIAC, a tripartite body involving the operators, unions and regulator to discuss matters of mutual interest; for example additional training for safety reps to equip them better.
- Thinks that safety reps can contribute to investigations at a certain level, but the aim is not to make them experts.
- HSE workforce survey shows good engagement offshore.

Sources of evidence:

17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response:
Not Applicable. All exploration and production activity in the U.K. is conducted by the private sector.

Sources of evidence:
18. What non-legislative guidance is used / available in your country?
   a. What non-legislative guidance is available (if any)?
   b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?
   c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response:

On the whole, sees interpretative guidance as an essential and key ingredient for two key reasons. First, to aid understanding and add clarity on the overall intent of regulation (legal compliance type guidance). Second, to inform and share good practice amongst operators. The former is seen to be particularly key as some elements of regulatory provisions are vague and lack sufficient clarity to aid an understanding of what the overall intent is aimed at. A prime example that is often debated at length is the issue of accommodation offshore.

Guidance on the former largely falls under the purview of the HSE. Pertinent examples (amongst others) here are the ALARP and assessment principles guidelines which describe the understanding and expectations of the regulator on these two themes. These are seen as instrumental (by operators) in aiding compliance with statutory provisions.

Industry bodies such as Oil and Gas UK, OGP, API, ISO also produce guidance documents on a variety of issues (workforce engagement was mentioned specifically). These are understood to represent “good practice” and not “best practice”.

The difference between the two is that “best practice” is understood to be at the leading edge of practice, at the frontiers. “Good practice” is seen to be adequate to satisfy regulatory provisions and is what HSE enforces in accordance to the ALARP guidelines. In a sense these can be seen as a benchmark. The expectation is that over good practice standards will develop into best practice.

Sources of evidence:

**V.32.5 Scope**

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?
   a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?
   b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response:

a. “Special sources of hazards” are understood to be those that can result in a Major Accident i.e. fires, explosions, blowouts, structural failure, ship collision associated with exploration and production activity. These are clearly distinct from occupational type hazards.

b. Already covered in earlier questions.

c. “Normal” is understood to reflect day to day steady-state operations and will include as routine planned inspections, maintenance and repair activities, testing, start/shutdown, work overs etc. On the other hand, critical is understood to include emergency situations which are planned for but do not constitute day to day activities. Basically, any deviation from the normal operations identified above.

Direct additional question: Do you feel there are any hazard types or risk sources that are...
not covered?

Feels that all hazards that present a risk to people are covered. Any hazard that has the potential to cause harm (in normal and emergency) to a person when working offshore should be addressed and covered by the safety-case. NO – The safety case is about demonstrating that major hazards are managed, risks from the MH are ALARP and that there is an effective SMS. So non-MH are not covered in a safety case.

20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

For a fixed installations:
- The regulations start when the first part is installed/fixed on the sea bed. It ends when the facility has been completely removed.

For mobile installations (e.g. mobile drilling rigs):
- While docked (i.e. in sheltered waters), they are not deemed offshore installations; hence the offshore regulations do not apply. However, they will remain subject to the HSAW etc. act.
- While in transit, the scope of application is varied and depends on the overall intent.
- While in transit to a drilling location on the UKCS, some elements of the offshore legislations will apply. While on station (start of anchoring up), the full suite of legislation will apply.

From a safety case perspective, an accepted safety case is not needed until a fixed production installation until commencement of the first well drilling operation FROM the installation OR the facility receives hydrocarbon for the first times. Prior to this, other legislations apply, but not a requirement for a safety case. However, an accepted SC is needed to receive hydrocarbons.

For a mobile installation it requires a safety case when it enters UK waters with the intention to drill there.

Sources of evidence:
21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

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| With regards to the production process, the law (in this case the HSAWA etc. Act) applies to the installation and activities in connection to the installation (connected and immediately preparatory).  
- For example, consider an FPSO and Tanker used in the production process.  
The tanker sailing to the loading/offloading location is not covered by the offshore legislation but by the merchant shipping law.  
- The connected activity (pumping of hydrocarbons) and the immediately preparatory activity (connecting the hose) are covered by the HSAWA act. Note that only the personnel directly involved in the activity will be covered and not the entire crew of the ship.  
The above is purely illustrative and outlines the general principles. It is not as clear cut in practice and there are many grey areas which are addressed via MOU’s between the HSE and other regulators (e.g. the maritime authority). | |

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

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23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO\textsubscript{2} capture and storage)?

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| MAR regulations discuss gas storage hence suggests that CO\textsubscript{2} storage might be covered here.  
Also considers activities in a swing field to be covered by the normal UK offshore SC regulations.  
Doesn’t see why the regulations/directive should not apply to depleted salt-domes and coal bed gasification. | |
24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”)? Does it cover divers in diving operations?

Response:

General
The installation is seen to be the primary place of work and the employees thereon are covered by the HSWA and supporting regulations. The employee is deemed to be covered by the HSWA when they are on the installation i.e. from the moment his/her feet touch the installation to when they leave.

Helicopter Travel
The Health and Safety at Work etc. Act 1974 (Application outside Great Britain) Order 2001 extends that application of HSWA to specified activities on UKCS. The order specifically excludes an aircraft in flight from the HSAW act. This is covered by the CAA Air Navigation Orders. The HSE have an MOU in place with the CAA to address this interface and any grey areas for example, when is an aircraft understood to have landed?

Walk to Walk vessels
- MAH legislation will not apply to the vessels
- The HSAW act will apply to people that work on the installation, the bridge and the connected activity. Large swathes of the vessels will not be covered by the HSWA act but will be covered by the merchant shipping act.

Divers
- Diving at work regulations will apply to divers in any diving situation, offshore or otherwise.
- AOGBO was amended to clearly state that the diving regulations still apply after the structure has been removed as there might be some work to do in the aftermath.

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

HSWA Act section 2 places duties on the employer. This is a defined term in HSWA section 53. Other terms are used such as licensee, duty holder, and well operator in the regulations which place specific duties and responsibilities on the parties so designated. The designations are not mutually exclusive i.e. they do not abrogate the responsibilities of either.

The SC has to describe the interfaces between the various parties and how they are managed. NB Directive 92/91/EEC holds that the interfaces should be coordinated (article 3.3) but does not require that this information be included in the safety and health document.

The employer can also be an installation operator or owner (duty-holder).

The well operator can be different to the installation operator. The safety-case duty holder is not necessarily the well operator, especially in the SNS where there can be a central hub installation (manned) and linked to several unmanned satellites. Combined safety cases are allowed for, say in the case of a complex of installations. Indicated that the views in the Netherlands might be different with regards to well operator versus installation operator (follow up and confirm).

Sources of evidence:
The installation operator (also the safety case duty holder) is the person in charge of the day-to-day operations of the facility.

The installation operator has ultimate responsibility for those at work on the platform. He/She is considered to be the principal employer in relation to the activities on the platform. In addition to this, other employers also have a responsibility for persons under their direct employ working on the platform and thus there is a requirement for the installation operator to coordinate activities of all employers.

26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?

a. What is the definition in the relevant legislation?
b. How do stakeholders understand this criterion?

Response:

The SC regulations include a general requirement to keep the SC up to date, that is to say all changes need to be incorporated into it. Within a safety case, there is a requirement for the duty holder to define what would constitute a material i.e. major change. Thus, some definition will be outlined within safety cases. This can help, but is not definitive. The HSE in its interpretative guidance (look for this) has also given some indication of what constitutes a material change. Again, these are indicative, not definitive and by no means exhaustive.

Overall, the definition of what constitutes a major change is a difficult theme to pin down and define. Experience has shown that some inspectors have been known to be capricious in their interpretation of this requirement. Some grey areas exist.

However, a major change is understood to be one that changes the basis on which the original safety case was accepted, for example changes to the basis on which risk control decisions were made or which necessitate a review of the adequacy of the MH control measures on the risk profile (either upwards or downwards) of the installation. Inherent in this definition is a pre-disposition towards changes that can contribute to or limit the potential for a major accident hazard as opposed to Occ. H&S.

Sources of evidence:
27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
Verification of SCE’s seen as a key element of the assurance process second or third party. The SCR includes provisions to demonstrate adequate provisions for audit arrangements (i.e. via internal control mechanisms), but these are not to a common standard. This can include audits by consortia partners.

The HSE then confirms that the contents of the safety case are suitable and robust. This acts as a key check step/feedback process.

The legislation includes a specific requirement for a well examiner. This can be either 2nd or 3rd parties. Directive 92/91/EEC is understood to be weak on wells as a whole.

In addition to the above, the HSE carries out physical inspection of the asset(s) as an extra level of regulatory control and to check compliance with the assertions made in the safety case. Asserts that 3 key components- all equally important—form a successful regulatory regime:

1. A competent and well-resourced regulator.
2. A regulatory framework that drives the right behaviours. In this case, a goal-setting regime).
3. Industry (operators, sub-contractors, workforce, verifiers) buy-in (arising from a highly consultative process between all parties – the union, the HSE and the industry).

As a self-criticism of the industry, he indicates that the verification schemes haven’t worked as well as they can or should. A study has been commissioned by SCS to look into this and identify the barriers to successful implementation; new guidance to be published shortly.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
Already addressed in Question 27.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
The PFEER regulations include requirements for an emergency response plan and to consider the worst case scenario and to liaise with organisations that would provide assistance in the event of an incident. The scope of PFEER is to ensure that all employees (i.e. the rescued) are rescued to a safe place. Rescuers covered till in a safe location.

Any incident will be considered as an activity in connection with the installation, hence the HSAWA act etc. 1974 will apply to those individuals (i.e. rescuers) associated in the rescue activity.

Sources of evidence:

30. How does your countries relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?
Response:

Disabled person are covered by the same provisions given in the directive (i.e. Directive 92/91/EEC). These were transposed directly without any embellishment.

Sources of evidence:

V.32.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

Response:

The view of the industry is that their experience of enforcement is seen to be firm, fair and professional.

HSE Enforcement (with regards to strategy, design, approach) is the same onshore/offshore. This is guided via the principles outlined in their enforcement principles document (available on the HSE website) This basically states that the HSE has to be proportionate, targeted, transparent and accountable in all their actions. They focus on the items that pose the highest risks.

The HSE also uses an enforcement management model as a guide. This sets out how the HSE goes about enforcement so as to ensure consistency. This is essentially a means by which the HSE ensure greater consistency in enforcement decision making via different inspectors.

Enforcement activity is targeted at poorer performers. Targeting is based on a huge range of factors and draws heavily upon the level of confidence in the pertinent company’s management system to maintain/improve current standards of safety.

Sources of evidence:

32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?

Response:

HSE is seen to be a key element to the success of the H&S regime because they have the competence and the resources to provide the required challenge.

Current inspection levels seen to be fair/about right. Enforcement activity is welcomed as long as it firm and fair.

The HSE serve notices, but do not have targets as such. All companies use the notices as a learning experience.

The HSE’s competence coupled with its firm and fair approach are the key reasons why the regime is perceived to be successful.

Sources of evidence:

33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?

Response:

The HSE as an employer.

The installation operator also has responsibilities for everybody on the installation.

The helicopter pilot has responsibility for his crew and pax.

Sources of evidence:
The helicopter company also has responsibilities.
Every individual has responsibility for each other MAR reg 8 duty of cooperation.

V.32.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

Response:
Has resulted in a world-class regime. This is reflected in widespread recognition by various parties (OSPRAG, report) including the EU and independent reviews (Maitland).
The SC approach has grown to become a de-facto approach by some operators in all their operations globally.

Sources of evidence:

35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?

| a. How successful (in your opinion) is the implementation of the relevant legislation in your country? |
| b. What (if any) objective measures are available to show its effectiveness? |
| c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe). |

Response:
- a. Seen to be very successful. Has high degree of industry buy in. Considered to be more effective than the Norwegian system (more checks/balances e.g. well operations).
  
  Evidence – Workforce survey report, Lost time injury rates which compare well with other sectors.

  Looking at the particular example of the (almost) blowout on the Gullfaks installation (fixed) report might be on the PSA website). The UK has a requirement for well notifications in advance and for weekly drilling reports. No such requirement exists for production installations in the Norwegian regulations.

  - 10

| Sources of evidence: |

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?

| a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive? |
| b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect). |
| c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect). |

Response:
As stated earlier, the Cullen recommendations were the bedrock of the current regime rather than the Directive 92/91/EEC.

In immature countries, the directive could be considered to a first step in the right direction.

Notes that imposing the current regime in a country without a history of H&S enforcement might be a bit of a jump (described as “running before walking”) and might prove
problematic as the support structures are not in place and where countries lack the skills, knowledge and infrastructure.

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

Response:
   a. The key difficulty was the move from an incredibly prescriptive/largely maritime based to a goal setting regime. The industry did initially not feel comfortable making risk-based decisions for itself.
   
   Huge improvements were achieved due to the need for companies to take a hard critical look at the requirements of their SMS etc. Primary evidence for this is seen in the reduction of loss time injuries. Major hazard focus also helped to drive down OH&S incidents through improvements to SMS.
   
   b. Reduction in lost time incidents.
   
   c. None identified.
   
   d. All the regulations are aimed at the installation operators which will mostly be large organisations. Effects in terms of reduction in LTI will be the same for all sized organisations.
   
   e. Accommodation. Who can share cabins? Is hot bunking an acceptable option? This has potentially had a negative impact on the potential for women to work offshore (the cabin sharing issue).

V.32.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
   a. Yes
   
   b. Yes – it is goal setting and hence ultimately flexible and adaptable to the most current good industry practices (for which guidance can be developed without the need to change the law)
   
   c. Yes
39. Are changes needed in Directive 92/91/EEC?

<table>
<thead>
<tr>
<th>Response</th>
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<tbody>
<tr>
<td>a. No. Could have been made better at the time of the introduction if the lessons and recommendations from the Cullen Inquiry had been incorporated.</td>
</tr>
<tr>
<td>b. No – it is for example a bit thin on well operations safety.</td>
</tr>
<tr>
<td>c. It’s a reasonable starting point for countries that don’t have anything in place, albeit recognising that the necessary support structures are required (e.g. a competent and well-resourced regulator).</td>
</tr>
<tr>
<td>d. No comment, though having attended NSOAF meetings I have reason to believe that there are similarities.</td>
</tr>
<tr>
<td>e. See previous responses in questions.</td>
</tr>
<tr>
<td>f. No, not at the moment. There is overlap. For example the safety case and the major hazard report.</td>
</tr>
<tr>
<td>g. The directive needs to clearly separate MAH from non-MAH requirements. Elements of the proposed legislation can be included in the MAH section.</td>
</tr>
</tbody>
</table>

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?

<table>
<thead>
<tr>
<th>Response</th>
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</thead>
<tbody>
<tr>
<td>a. Minimal change to the UK regime. Improved standards over time in the rest of the EU.</td>
</tr>
<tr>
<td>b. Minimal as largely driven by the Cullen recommendations.</td>
</tr>
<tr>
<td>c. Would improve things significantly, and in time up to a 10. But would require effort and assistance from the stakeholders.</td>
</tr>
</tbody>
</table>

Sources of evidence:
V.32.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response:

Difficult to quantify the burden of Directive 92/91/EEC as the UK implementation focussed primarily on the Cullen recommendations. However, there is some work being conducted in conjunction with the HSE to determine what the burden is (as a cost) which will be published in April. (Cross reference with the HSE). Not sure why, but this was never published by HSE.

It was indicated that burden and bureaucratic elements of the SCR regulations were removed in the latest update.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:

The Cullen recommendations went far beyond those of the directive and are the bedrock of the current UK SC regime which is considered to be world class. Any proposed changes to the directive as it currently stands are considered to be along the lines of upgrading it to meet current standards (with a few additions). As a consequence, the increase in administrative burden is expected to be minimal.

Sources of evidence:
V.32.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the work place. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

As a country which has always implemented directives, there is a clear preference for the directive approach. In addition a Directive could more easily be blended in with current UK legislation.

The use of a regulation for the reason that there are countries that have not implemented directives would penalise countries around the North Sea where existing standards are world class.

Key issues with the regulation approach highlighted are:

1. The administrative burden involved in the regulation is key. It will have direct application, which will necessitate the need to dismantle existing structures/regime and start again. This will involve the need to resubmit safety cases and have them re-accepted by the HSE etc.

2. Does not agree with the view that a regulation approach is required because the directives are not working. Sees it as key for a country to administer its own affairs as opposed to central control from the EU.

3. Sees the current draft regulations as confusing, ambiguous and poorly written.

4. Does not agree with the need for central control by the EU

In summary:

1. From a philosophical view – A directive is preferred as it keeps regulatory control within the pertinent countries.

2. For a practical view – a regulation has a huge burden. While a Directive would also be a burden it would be significantly less burdensome than a Regulation, avoid the negative consequences of a Regulation AND could be implemented quite quickly.

3. Specifically – the draft regulations as it stands lacks clarity and is ambiguous.

Sources of evidence:

Source reference(s)
44. In your opinion is the Directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?
   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

For immature countries, this depends on whether the stakeholders involved are an IOC or NOC. Thinks that the directive approach is good for IOC’s, but questions if NOC’s (particularly new ones) would have the capability.

Immature countries would need a new regulatory authority with the requisite competence to ensure legislative requirements are complied with irrespective of whether a regulation or a directive is used.

Suggested options to improve the effectiveness of the regulatory regime in immature countries (and the EU as a whole):

- Secondment / exchange schemes. There is a huge pool of retired/semi-retired resources in Aberdeen that would be interested in this.
- Knowledge sharing (+ experience).
- Guidance documents (the HSE website has a loads that are free or at a modest charge).
- Willingness for OGUK to share knowledge and experience.

Sources of evidence:

45. In your opinion is the Directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. artic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

Believes so. Generally, the goal-setting approach will work in all situations (referring to UK legislation). However, this might need to be supplemented with specific guidance documents to address the hazards/characteristics of new environments. Having said that there is already a considerable body of guidance and standards that can already be applied to extreme environments – these would fit within any goal setting approach.

Sources of evidence:

46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?

   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:

Basically, introduce the UK regime (which is based on Cullen) as it stands into the directive. Particularly as it has been tested and refined to remove all the unnecessary bureaucratic elements (“described as a sledge hammer to break a nut” that were not seen as supporting or improving the safety agenda e.g. 3yr SC resubmission for re-acceptance to thorough review approach.

Sources of evidence:
### V.32.11 Other issues

47. Please add any other comments that you consider relevant to the objectives of the study.

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
<tbody>
<tr>
<td><em>No response.</em></td>
<td></td>
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</table>

### V.32.12 Attached Information

No further information.
V.33. NOTES FROM INTERVIEW WITH:

Union
Unite and RMT
from
United Kingdom
V.33.1 Demographic Questions

<table>
<thead>
<tr>
<th>Organisation:</th>
<th>Unite, RMT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholder type:</td>
<td>Union</td>
</tr>
<tr>
<td>(e.g. Government/Regulator, Trade association/Operator, Union, NGO)</td>
<td></td>
</tr>
<tr>
<td>EU/EEA country/county in which your organisation operates:</td>
<td>UK</td>
</tr>
</tbody>
</table>

V.33.2 Initial questions

1. What is the current scope / boundaries of the Directive 92/91/EEC legislation in your country?
   a. Which parties does it cover (operators, subcontractors, maritime workers, divers, regulators and emergency responders, etc.)?
   b. For which activities are the parties covered (travel to facility by helicopter/boat/vehicle, work on site, work on a vessel delivering to a platform, etc.)?
   c. Which parts of the exploration and production lifecycle are covered by the legislation (from design, construction, towing, etc. to decommissioning)?
   d. What “extraction through drilling” activities does it cover, does it apply to new and emerging technologies e.g. coal gasification, CO₂ injection, CCS and fracking?

   Response: N/A. Interview started at Q6.

   Sources of evidence:

2. How effective is the relevant legislation in your country?
   a. Framework legislation (Directive 89/391/EEC); the “Mother Directive”.

   Response: N/A. Interview started at Q6.

   Sources of evidence:

3. What changes (if any) do you think are required following the Deepwater Horizon accident?
   a. To national legislation.
   b. To Directive 92/91/EEC.

   Response: N/A. Interview started at Q6.

   Sources of evidence:

4. What changes (if any) are required to Directive 92/91/EEC to ensure continuity with the proposed (draft) European regulation on oil and gas?

   Response: N/A. Interview started at Q6.

   Sources of evidence:
5. What other options (e.g. guidelines, stakeholder working parties improvement initiatives) do you think should be used to increase the effectiveness of the relevant legislation?

Response: N/A. Interview started at Q6.

Sources of evidence:

V.33.3 Context

6. What is the current and expected future level of activity in mineral extraction through drilling in your country?
   a. Please provide a brief description of relevant activities in your country.
   b. How many exploration & development wells drilled annually, and expected trends?
   c. How much oil & gas production annually, and expected trends?
   d. Extent and plans for other “extraction through drilling activities”.
### Response:

- **Had some concerns about the safety standards offshore in the past—and was very critical of the HSE, but sees conditions are getting better i.e. an improvement.**

- **Sees the Brent Bravo incident (two fatalities) as a turning point; inspection levels by the HSE increased after the incident. Also considers the event to be a driving force for improvement in enforcement management practices.**

- **The industry has experience 1 fatality over the last years. Though an unwelcome/unwanted event, the rates are much better than in the early 90’s.**

- **Overall sees improvements as being reactive “i.e. stemming from fire-alarm type approaches”. Would like the HSE to be more pro-active.**

- **Remarked that the unions have a good relationship with the HSE, but no real contact with DECC.**

- **Also expresses concerns over the safety of ageing installations.**

- **Remarked that “regulations can be as good as you want them to be, but what is key is the infrastructure and resources to implement it”. Sees the infrastructure required to administer the regulations and ensure compliance as key.**

- **Would like the EU to engage with the worker unions in the development of the proposals. This is currently not the case. “Unions have a right to be at the table as the regulations have direct impact on them”. Not in favour of the top-down/hierarchical approach, advocated for more broad scale engagement (similar to a social dialogue approach.)**

- **In general terms, sees the regulations in the UK as good, but highlights that more needs to be done to ensure it is implemented properly. Also, sees the need for new and firmer approaches in areas where things are not working as well [Can you please expand on this?]**

- **Would like to see the adoption of the Norwegian safety model approach which ensures fuller engagement of the safety reps, especially with regards to full time positions (not as add-ons to their traditional roles as is current practice in the UK.**

- **Considers the UK government’s current approach to deregulation (in H&S arenas) to have a detrimental impact on safety in the North Sea. Considers such initiatives (the changes and cuts) will have an impact on enforcement activity in the North Sea.**

- **Would like to preserve the current status as it is. Suggests that if the new regulations are weaker than what is in place already, the govt. will use this as an excuse to remove the additional extra (gold-plating) which will result in a reduction in safety standards.**

- **Commenting on the governments. policy on “one in/one out” for deregulation stated that “regulation needs to be a two-way process”. Can you please expand on this?**

### Sources of evidence:

#### 7. What is the balance of activity between offshore and onshore industries in your country?

| a. Proportions of exploration & development wells drilled onshore and offshore. |
| b. Proportions of oil & gas production onshore and offshore. |

**Response:**

*Not applicable/No response given.*
8. What is the balance of activity between private and public-sector exploration and production organisations in your country?

Response: Not applicable/No response given.

Sources of evidence:

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9. What has been the experience of fatalities and injuries in mineral extraction through drilling in your country?

a. Trend (and number) of fatalities over the last 10 years.
b. Causes of death.c. Number of injuries in the most recent year.d. Number of people employed.e. Please provide data sources (if available).

Response:

- Considers fatality statistics to be robust (as difficult to hide), but sees LTI data as under-reported for a variety of reasons which include:
  - The practice of linking bonuses with “no accidents”, which results in an incentive not to report incidents.
  - Contractual requirements which have limits on acceptable accidents rates (e.g. your LTI accident rate must not exceed a certain value).
  - Disciplinary action taken in response to minor issues also leads to under reporting of accidents.
  - Fear of reporting, coupled with bullying, intimidation, harassment, threat of disciplinary action, and fear/incentives to cover up issues.
  - Considers the culture of under-reporting to be endemic/institutionalised within the working environment.
  - Highlighted a practice that is used in the rail industry in which managers saw light duties as a means to avoid reporting incidents under RIDDOR i.e. a wrong understanding of reportable incidents by managers. Also highlighted that the Transocean report on DWH indicated there was evidence of under-reporting.
  - The issue of under-reporting of LTI has been raised (by the unions) to the HSE and industry. No firm action has been taken to address this till date.
  - Also identified the NRB “Not required back” mechanism as a cause of concern. States that it is a complexly legal BUT difficult to appeal. Also raised a point that although it is hardly used, it is widely known about because it creates fear in the workforce.
  - Highlighted the challenging and sometimes difficult nature of the process of negotiating with the industry on key issues and sees the unions as struggling in this area despite the fact that they are well organised/set-up. Perceives that this (negotiating power/influence) will be a key problem for the unions in fledgling countries (e.g. Poland) where the level of organisation will be low or non-existent.
  - Advised we engage with the International Transport Federations. Paul to send contact details through (Paul, can you please send details as advised?).

Sources of evidence:
10. Which accidents (or near misses) provided the most significant lessons for safety in mineral extraction through drilling for your country?

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<th>Response</th>
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<tbody>
<tr>
<td>Piper Alpha</td>
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<td>Brent Bravo</td>
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<tr>
<td>Sees more recent onshore incidents (Buncefield and Texas city) as really driving the process safety agenda – mostly onshore, but has also had some impact offshore. DWH is also driving further change.</td>
</tr>
<tr>
<td>Sees differences in approaches to how safety is managed offshore/onshore within the same organisation. Questions if this should be the case.</td>
</tr>
<tr>
<td>Considers the SCS (Step Change in Safety) initiative to work well because it is well funded. It (the SCS) is also an avenue within which the unions can voice/raise concerns. The net effect is that it has required the industry to be more open/transparent about its affairs (which is not in line with their culture). Sees significant progress in this area mostly as a result of pressure from the unions (following on from FOI requests).</td>
</tr>
<tr>
<td>Would like to see transparency at play in the development of the new regulations (i.e. broad scale engagement).</td>
</tr>
<tr>
<td>Advocates for provisions on worker participation to be made more explicit in the directive.</td>
</tr>
<tr>
<td>Remarked that whistle-blowing provisions are only needed where negative cultures exist.</td>
</tr>
<tr>
<td>Highlights that competency levels have been identified to be an issue (for e.g. in the OSPRAG report on DWH), but hasn’t seen a response from companies with regards to how they plan to address this issue. See various reports (including those from the SCS) making recommendations that are not followed through/acted upon by companies. As a result, advocates for some mechanism by which organisations can be held to task if they are seen no to take action. Indicates that the HSE has recently committed to ensure compliance with new drilling safety standards that have been issued in the aftermath of DWH. Would like to see more of this occurring.</td>
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**On the issue of competence…**

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<th>Sources of evidence:</th>
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<tr>
<td>Source reference(s)</td>
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<tr>
<td>Remarks that legislation (in any format) often uses broad brush statements such as “competency must be ensured” in outlining requirements for competent workers. Would such a requirement to be expanded and clarified. Recognises that this will be a challenge particularly as it has the potential to move to more prescriptive approach as opposed to a goal setting approach (and all the attendant consequences). Nevertheless, would like to see any legislative provisions in use clearly outline what the required competency levels are (perhaps in additional guidance/interpretative documents and the penalties for breaches. Sees the clarity to be particularly useful for enforcement activity as it removes the ambiguity.</td>
</tr>
<tr>
<td>Highlights that training is not equivalent competence and there is a need for competence assurance programmes to ensure the required competences are developed amongst the workforce. Also indicated that competence develops over time. Highlights the “COMAH competence initiative” from the HSE as one example of this (i.e. competence assurance program) and this stems from their approach to enforcement.</td>
</tr>
<tr>
<td>Noted that the drilling industry is global and as a consequence competence levels must be the highest all over the EU. Furthermore the same competency requirements must apply i.e. the industry must work to the best standard in Europe. Has observed lower competence levels in certain EU countries (where bribes can be used to demonstrate competency levels).</td>
</tr>
<tr>
<td>Highlights that drilling contractors are often loathe to make challenges on various issues as most often than not, commercial imperatives outweigh other considerations and contractual bonuses are linked to and embedded within contracts. <strong>Contractual</strong></td>
</tr>
</tbody>
</table>
11. What has been the experience of significant occupational illnesses in mineral extraction through drilling in your country?
   a. Number of occupational illnesses in the most recent year.
   b. Key types of illnesses.
   c. Please provide data sources (if available).

Response:
- Known issues are managed e.g. asbestos.
- There is a responsibility on the industry to manage identified risks e.g. bakers are known to have dermatitis.
- Onshore there are measures to identify if there are any recurring illnesses, but no similar mechanisms exist offshore. For example, where there is a medic in an onshore facility, he/she works together with the unions to identify recurring instances of occupational illness/risks. This does not happen offshore.
- Apart from the medical that all offshore workers have to undergo, not a lot of monitoring occurs offshore. Sees an increase in stress and anxiety. Furthermore, the medical/health surveillance is focused on being “fit for the rig”. Does not work the other way in terms of looking at the impacts of the job on the health of the workers. It needs to be extended to include a form of occupational health surveillance as well as look at the effects of the job on the individual. Wants the industry to ask “what are we doing that could damage the health of individuals” (i.e. take a proactive approach).

Sources of evidence:

V.33.4 Regulatory approach

12. How has Directive 92/91/EEC been interpreted in your country?
   a. Please provide a brief summary of how the directive has been transposed (i.e. has the interpretative approach being “literal” or more focused towards meeting the overall intention?).
   b. What (if any) requirements does the legislation in your country include that go beyond the requirements of the directive?
   c. What (if any) aspects of safety and health do they address that are not addressed by the directive?
<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Advised to consult the HSE.</td>
<td></td>
</tr>
<tr>
<td>b) Advised to consult the HSE.</td>
<td></td>
</tr>
<tr>
<td>c) “Recovery from sea” (addressed in Regulation 17 of the PFEER which requires a “good prospect of recovery”) is seen as one area that is not covered adequately, particularly in inclement weather conditions.</td>
<td></td>
</tr>
<tr>
<td>- Sees the industry as putting pressure on SBV’s to provide recovery in extreme conditions.</td>
<td></td>
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<tr>
<td>- The fast action actions cannot be used under these conditions.</td>
<td></td>
</tr>
<tr>
<td>- The “Dacon scoop” is often used as a means to recover people from the sea. This is more challenging than the use of a helicopter and it is unclear as to whether it offers a good prospect of recovery. Nevertheless, it is used to justify continued operation in adverse weather conditions.</td>
<td></td>
</tr>
<tr>
<td>- Sees the challenge as stemming from the adopted terminology “good prospect of safety” which needs to be further clarified to outline the legislative intent. What approach (es) constitute a “good prospect of recovery”? Sees this as an issue with the goal-setting approach which is based on risk assessments. Raises the point that if the risk assessments are inadequate, then everything else that stems from it is equally inadequate. Sees the goal-setting approach as requiring high levels of competence/expertise to work as intended. Advocates a mix of goal-setting and prescription rather than a direct adoption of a single framework.</td>
<td></td>
</tr>
<tr>
<td>Highlights that the industry standard for recovery is 2 hours. This is adequate in calm conditions BUT not in adverse weather.</td>
<td></td>
</tr>
<tr>
<td>Also highlights that the use of Kevlar bottles in standard in Norway, but not in the UK (where rebreathers are employed).Does not see why the adopted measures should vary across the EU and advocates for the institution of best practice across the board.</td>
<td></td>
</tr>
<tr>
<td>Suggests that standards should be more widely adopted as best practice, but recognises that they (i.e. standards) do not always reflect/capture local specific issues and would need to be modified as require OR be flexible enough to reflect local conditions.</td>
<td></td>
</tr>
<tr>
<td>Discussed the merits/demerits of having legislative provisions clarified within the legislative instrument itself or in guidelines. Not explicit on which method is preferable as they both have advantages and disadvantages. Sees the need for clarity as the key concern rather than how it is achieved.</td>
<td></td>
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</table>

13. Does your country implement Directive 92/91/EEC as part of a wider legislative framework (i.e. existing provisions, perhaps also broader H&S legislation) or has it been enacted as a stand-alone piece of legislation?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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<tbody>
<tr>
<td>Wider framework.</td>
<td></td>
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</table>

14. Does the legislation in your country (in your opinion) focus mainly on major accident hazards or occupational safety?

<table>
<thead>
<tr>
<th>Response:</th>
<th>Sources of evidence:</th>
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</thead>
<tbody>
<tr>
<td>Both. But would like to see more on the Occ. And Health and Safety side.</td>
<td></td>
</tr>
</tbody>
</table>
15. Explain the extent that the legislation in your country use goal-setting requirements vs. prescriptive regulations to transpose the requirements of Directive 92/91/EEC.

<table>
<thead>
<tr>
<th>Response</th>
<th>Sources of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-dominantly Goal -setting.</strong></td>
<td></td>
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</tbody>
</table>

15a. To what extent does the legislation in your country focus on “operational procedures” as a (primary) means to achieving safety & health management relative to “hazard protection”?

<table>
<thead>
<tr>
<th>Response</th>
<th>Sources of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No response.</strong></td>
<td></td>
</tr>
</tbody>
</table>
16. Does the legislation in your country include provisions to encourage the development of a safety culture (or safety climate)?

Response:

Remarked that the safety culture within the organisations with activities on the North Sea can vary widely and is independent on the scale of operation. Some small companies have very proactive approaches whilst other long standing ones (i.e. oil majors) can be facile. Sees the person(s) responsible for safety in the working environment e.g. OIM’s, safety reps, safety manager etc. as central to ensuring a safety culture on drilling rigs and other facilities as opposed to the organisation per se (although this also plays a role). This is evident from the culture on some facilities which can be described as fantastic (all three partners are seen to play a key role). Key success factors here include: good communication/working relationship between all those with a safety mandate; ability to raise safety concerns and high levels of transparency (e.g. information on maintenance backlogs are open to all and this allows workers to take ownership).

Also sees rights for safety reps as key. Sees the reps as marginalised, not fully involved, and having limited rights to direct/initiate activities. The regulations require that the safety reps are consulted on the safety case. A recent survey indicates that only 30% of reps have had any input to the safety case. Sees this as strong evidence of lapses in the practical application of the regulations. Remarked that workers in Norway have SWA, although there are limited opportunities to use this as organisations tend to ensure everything is in order as they do not like the negative publicity that stems from its use. Highlights that no instances exist of any organisation that has been found to be in breach of the workforce regulations or prosecuted as a result. Considers the HSE as not regulating/enforcing this dimension as much as it can (sees such enforcement activity is necessary/central for compliance). Sees involvement of the people exposed to the risk as key to developing a safety culture and the difference between “paperwork” and “reality”. They need to be strongly involved in all matters relating to safety. Remarked that in the rail industry, the following exist:

- Workers have the ability to raise issues without fear of reprisal/reprimand.
- There is confidential reporting system.
- Safety reps are employed on a full time basis and have direct reporting lines to management and the unions.

The above initiatives were hugely welcomed by the workforce and sent a clear message that safety is a key issue and high on the organisational agenda. Espouses that such measures should also be adopted in the oil and gas/process industry. Key concerns on the current safety rep model which is not full time include: lack of time to fulfil both requirements (i.e. a normal job and the safety rep role). Difficult to arrange time-off, compensation for travel that might arise etc.). Went on to remark that safety reps have a provision for 5 days basic training to help them develop the skills/knowledge to execute their role plus any additional time that is considered reasonable (typically for key activities). This was perceived to be inadequate and has led to some changes that will be in place in the coming months. The changes are the development of 4 new formal courses that will be delivered by recognised training providers (OPITO). This will also form a basis HSE enforcement activity.

Also stated that training requirements are more extensive onshore than offshore. Would like to see the onshore principles being applied offshore however sees the industry as not being sympathetic/welcoming of safety reps having input to management decisions.

Gave an example of the initiative adopted by Shell in the past but now inactive.

- Shell created four (4) full time safety rep roles to improve LTI rates on Shells facilities (bravo etc.).
- They rotated round the platforms and conducted audits etc.

Sources of evidence:
17. What are the differences in approaches towards health and safety management between private and public-sector exploration and production organisations in your country?

Response: N/A

Sources of evidence:

18. What non-legislative guidance is used / available in your country?

a. What non-legislative guidance is available (if any)?

b. To what extent is this used (in addition to / in order to clarify legislative requirements) to help protect safety and health?

c. By whom is it issued and how is it created (e.g. in cooperation with employers and workers etc.)?

Response: SCS/HSE has produced a number of guidance documents that are very good e.g. the HSE document “Play your part” which outlines how offshore workers can help improve health and safety in their environment.

Sees a lack of engagement (either as read or followed/acted upon) by the workforce on the guidance documents as a key issue as opposed to the availability of such documents.

Sources of evidence:

V.33.5 Scope

19. Directive 92/91/EEC states that the employer must identify, assess and manage “special sources” of hazard associated with the workplace in both “normal” and “critical” situations and that the output of this activity must be documented in the safety and health document. How you’re your national legislation interpret these terms?

a. What does the relevant legislation interpret as constituting a “special source” of hazard? In particular, does the relevant legislation in your country include provisions for major accident hazards?

b. What does the relevant legislation interpret “normal” and “critical” to mean?

Response: Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.

Sources of evidence:
20. What parts of the drilling process does the relevant legislation cover? Does it, for example, cover movement to a drilling rig to the drilling location?

Response:

*Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.*

Sources of evidence:

21. What parts of the production process does relevant legislation cover? Does it, for example, cover stand-by vessels, construction of offshore installations, decommissioning, etc.?

Response:

*Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.*

Sources of evidence:

22. What other drilling activities does the relevant legislation cover? For example, does it cover shale gas drilling (fracking) or shale oil production?

Response:

*Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.*

Sources of evidence:

23. Does the relevant legislation cover other drilling-related operations such as underground storage of materials, (e.g. unconventional gas storage, CO₂ capture and storage)?

Response:

*Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.*

Sources of evidence:

24. How does the relevant legislation define the “workplace”? For example, does it cover transportation of workers (via helicopter or “rig to boat”? Does it cover divers in diving operations?

Response:

*Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.*

Sources of evidence:

25. How does the relevant legislation define the “employer”? For example, how does it apply to the network of duty-holders, licensees, owners, operators and sub-contractors in the offshore industry?

Response:

*Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.*

Sources of evidence:
26. How does the relevant legislation define “major” changes that are required to trigger revision of the safety and health document?
   a. What is the definition in the relevant legislation?
   b. How do stakeholders understand this criterion?

Response:
Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.

Sources of evidence:

27. Are all aspects of the safety work (risk assessments, safety reports, verification activities and reports, etc.) subject to quality control (QC) and quality assurance (QA), either in accordance with an international standard (ISO) or an internal organisational standard (prescribed internal systems) and / or a subject to independent / peer review? If so, how is this achieved?

Response:
Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.

Sources of evidence:

28. Is the information presented in the safety and health document subject to quality control (i.e. verified or assessed) by the regulator and / or other independent party? If so, how is this achieved?

Response:
Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.

Sources of evidence:

29. Does the relevant legislation cover workers involved in rescue and recovery operations?

Response:
Suggested we consult the responses provided by the HSE and industry for this question as they are the best parties to comment on this.

Sources of evidence:

30. How does your country’s relevant legislation address the gender equality and handicapped workers requirements in Directive 92/91/EEC?

Response:
Remarked that directive 92/91 has a requirement for separate accommodation for males/females (with the restrictions on bed space offshore).

- The strict interpretation previously applied in the UK led to reduction in the number of females working offshore. (a perverse consequence of the directive).

- A more flexible approach is allowing for more equality (separation by day/night shift)

- The directive needs to address this issue and reflect modern accommodation standards (en-suite rooms).

- The provisions in the directive are seen to be unenforceable/particularly restrictive for the older facilities.

Sources of evidence:
### V.33.6 Enforcement

31. How is the national legislation enforced in your country? Does it differ for different “extraction of minerals through drilling” activities, e.g. offshore vs. onshore, oil and gas vs. CCS, for different activities (e.g. drilling vs. production), etc.?

**Response:**

*Advocates for more unannounced inspections to be in place. Feels that too much notice is given and that current experience is that visits are prepared for. For e.g. It was typical for the doors to be open in the accommodation area, the ventilation to be poor and the dampers not working. All of which would be a key issue for smoke ingress in the event of an incident. Yet, all of these would be in good working order during an inspection. On onshore facilities, has observed that arrangements are made for safety reps to be away from the site (e.g. on training) during inspections. Such plans can only be facilitated because adequate notice has been given. Would also like to see the yearly inspection regime that was in place in the 1990s revived. Also recognises the challenge of getting offshore if unannounced inspections are to be mandated.*

**Sources of evidence:**

<table>
<thead>
<tr>
<th>32. How practical and successful do you consider enforcement of the regulatory approach in your country to be? How could it be improved?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong></td>
</tr>
<tr>
<td><em>No response given. See responses to Q31 for some context.</em></td>
</tr>
</tbody>
</table>

**Sources of evidence:**

<table>
<thead>
<tr>
<th>33. Who is legally responsible for the safety of regulators / enforcement officers while offshore or during transport to offshore installations?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Response:</strong></td>
</tr>
<tr>
<td><em>No response provided. See response provided by the HSE.</em></td>
</tr>
</tbody>
</table>

**Sources of evidence:**

### V.33.7 Effectiveness

34. What impact does the regulatory approach in your country have on safety and health protection?

**Response:**

*Seen to be an effective regime (25 years has elapsed since a serious incident), but there is scope for improvement.*

**Sources of evidence:**
35. How effective is the relevant legislation in your country in ensuring safety and health at work in mineral extraction through drilling?
   a. How successful (in your opinion) is the implementation of the relevant legislation in your country?
   b. What (if any) objective measures are available to show its effectiveness?
   c. Please rate its effectiveness in promoting safety and health on a scale from 1 (least effective country in Europe) to 10 (most effective country in Europe).

   **Response:**
   See response (Question 34).

36. How effective (in your opinion) is the Directive 92/91/EEC in ensuring safety and health at work in mineral extraction through drilling?
   a. Do the strengths or weaknesses of the relevant legislation in your country (in your opinion) result from corresponding strengths or weaknesses in the directive?
   b. Please rate its effectiveness in promoting safety and health in your country on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole on a scale from 1 (minimal effect) to 10 (very beneficial effect).

   **Response:**
   Sees 92/91 as having lower standard’s than the UK legislation. Hence, the effectiveness is not really driven by the 92/91.
   Indicates that the new proposals include some good ideas that could be incorporated into the UK regime.
   The goal setting approach help to improve standards and learning opportunities from accidents (e.g. the current Elgin incident).

37. Please mention any other relevant issues from the practical application of the relevant legislation:
   a. Any notable difficulties in the practical application?
   b. Any unexpected positive effects?
   c. Any unintended (or unexpected) negative effects?
   d. Effects on small and medium-sized enterprises (SMEs) and self-employed workers?
   e. Features presenting particular difficulties, taking account of the age and sex of workers, and turnover and recruitment difficulties in specific key skills, etc.?

   **Response:**
   No response.
V.33.8 Evaluation

38. Are changes needed in the relevant legislation in your country?
   a. Does the relevant legislation in your country adequately protect the safety and health of workers in mineral extraction through drilling?
   b. Does the relevant legislation in your country adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the relevant legislation in your country specify adequate minimum safety and health requirements?
   d. Otherwise, what changes are needed?

Response:
- Advised we consult the Maitland report.
- In terms of changes, would like to see best practice approaches being adopted.

Sources of evidence:

39. Are changes needed in Directive 92/91/EEC?
   a. Does the directive adequately protect the safety and health of workers in mineral extraction through drilling in Europe?
   b. Does the directive adequately address major accident hazards in mineral extraction through drilling, bearing in mind the Deepwater Horizon accident?
   c. Does the directive specify adequate minimum safety and health requirements?
   d. Is it consistently interpreted among the Member States?
   e. Is the directive free of other significant gaps?
   f. Does the directive ensure continuity and avoid overlap with the proposed European regulation on oil and gas?
   g. Otherwise, what changes are needed?

Response:
Would like to see the directive updated to reflect current best-practice thinking on risk regulation on the industry.

Sources of evidence:

40. What would be the cumulative effect of the changes you have proposed to the directive?
   a. What would be the cumulative effect of the changes?
   b. Please rate its effectiveness in promoting safety and health in your country after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).
   c. Please rate its effectiveness in promoting safety and health in Europe as a whole after the changes you have proposed, on a scale from 1 (minimal effect) to 10 (very beneficial effect).

Response:
Improved H&S standards for workers in the industry.

Sources of evidence:
V.33.9 Administrative burden

41. What is the current administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) of Directive 92/91/EEC and national legislation in your country?
   a. Please outline the administrative burden implementing the directive in your country.
   b. What (if any) objective measures are available to evaluate the burden?
   c. Are any changes needed to minimise it?

Response: 

Not directly aware but suggest that operators might exaggerate the administrative burden (i.e. associated costs).

The direct burden on the workforce is the costs associated with re-training/re-education etc.

Sources of evidence:

42. What would be the change in the administrative burden (cost in terms of time, money and effort in developing and enforcing the legislation and demonstrating compliance) resulting from the changes you have proposed to the directive?
   a. Please outline the how the anticipated administrative burden would change as a result of the changes you have proposed.
   b. How can the burden be minimised?
   c. Can existing systems cope with the extra requirements?

Response:

See above response.

Sources of evidence:
V.33.10 Future regulatory approach

43. In the EU, Directive 89/391/EEC (the framework directive) aims to safeguard the health and safety of workers in the workplace. This directive is supplemented by specific directives that address specific sectors. In the mineral extractive industries sector (which includes offshore oil and gas production), industry-specific health and safety risks to workers are currently governed by Directive 92/91/EEC. A draft regulation specifically targeted at the offshore oil and gas industry is currently being proposed. The intention is that this new regulation will sit alongside existing provisions. - What is the optimum balance (in your opinion) between the use of either a “regulation” or a “directive” to govern safety and health protection in mineral extraction through drilling industry in the EU and in particular in the offshore oil and gas sector?

Response:

- Sees the current regime as just beginning to bud, mature and yield fruit and would not like to see it broken down (which a new regulations would imply).
- Also expressed some concern as to the possible effects on the oil economy. Historically, the industry has responded negatively to factors that are seen to present a burden/act as a barrier (e.g. 10% tax hike led to a direct reduction in drilling activity).
- Raises the point that the directive approach has worked so far and doesn’t see the particular need for this to change. Sees the implementation gap as more of an issue.
- Also expressed concern that the regulation could be perceived as a “power-grab” and attempt to control by the centre i.e. a top-down/hierarchical approach.
- Sees the directive approach as the best way to achieve minimum/best practice across the EU.

Sources of evidence:

44. In your opinion is the directive equally effective for locations with both mature and immature mineral extractive industries, and if not have you suggestions on how its implementation can be improved for these different locations?

   a. What options (e.g. guidelines and support from other countries regulators or industry) could be used to increase the effectiveness of the directive?

Response:

- Workforce exchange programmes would help in terms of knowledge sharing.
- On legislative aspects would like to see their legislators visit the UK to learn/experience the way we do things.
- Would also like to see the immature countries taking the lead and playing a more active role in industry/regulatory forums e.g. IRF.

Sources of evidence:

45. In your opinion is the directive equally effective for the more extreme environments into which oil and gas operations are moving (e.g. arctic areas and deep water). Have you suggestions on how the directive or its implementation can be improved to address managing the risks associated with oil and gas operations in these more extreme environments?

Response:

No response.

Sources of evidence:
46. Almost twenty years has elapsed since the introduction of Directive 92/91/EEC. Given the operating experience gained in its practical application over that time how can the effectiveness of the directive be increased in Member States?
   a. What options (e.g. guidelines) could be used to increase the effectiveness of the directives?
   b. What options are used in your country?

Response:  
*See earlier responses.*

<table>
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<tr>
<th>Sources of evidence:</th>
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</table>

**V.33.11  Other issues**

47. Please add any other comments that you consider relevant to the objectives of the study.

Response:  
*N/A*  

<table>
<thead>
<tr>
<th>Sources of evidence:</th>
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</thead>
</table>

**V.33.12  Attached Information**

No further information.
APPENDIX

VI

MINERAL EXTRACTION THROUGH DRILLING ACTIVITY AND SAFETY PERFORMANCE
VI. MINERAL EXTRACTION THROUGH DRILLING ACTIVITY AND SAFETY PERFORMANCE

VI.1 Introduction

VI.1.1 Objectives

This appendix provides information on the nature of mineral extraction through drilling activity that is undertaken in the 27 Member States of the European Union (EU) and other countries of the European Economic Area (EEA). Its aim is to provide background / contextual information considered necessary to help understand the evaluation of the legislation on safety and health in the industry. The information is presented using both qualitative and quantitative data.

The various forms of mineral extraction through drilling activity undertaken are outlined together with some information (albeit limited) on the scale / level of each activity -viewed from both a local (i.e. country) and wider (European Union) perspective. The location in which such activity takes place is also presented. Additionally, the nature of organisational involvement in drilling related activity, e.g. public versus private sector, large versus small /medium enterprises (SME’s), is discussed.

As discussed in the main report, the scope of the study was further refined into a series of questions (see Appendix I) which the study would answer to ensure the overall objectives are met. There are five questions which were developed directly relate to the nature of mineral extraction through drilling activity undertaken and its safety performance. These questions are listed below:

- What is the current and expected future level of activity in mineral extraction through drilling in the 27 EU and 3 EEA countries?
- What is the balance of activity between offshore and onshore industries in each country?
- What is the balance of activity between undertakings and public-sector bodies in each country?
- What impact do the specific regulatory approaches have on safety and health protection?
- Does Directive 92/91/EEC adequately protect the safety and health of workers in mineral extraction through drilling? For example, is it fit for purpose?

The data presented in this appendix are drawn upon to develop appropriate responses to the questions posed above.

It is generally good research practice to match the scale of effort put into an activity to the desired results. Exerting more effort than is required, though beneficial in that more data is generated, does not significantly add value to the work. By the same token, too little effort is undesirable. Hence there is a need to achieve a degree of balance.

In this appendix, the amount of detail of information presented is set at a level that is considered commensurate with the aim of this element of the work (which is to provide adequate information to understand the context of mineral extraction through drilling in EU and EEA countries). As a consequence, this appendix should not be seen as an exhaustive analysis of the nature and form of the mineral extraction through drilling industry in EU and EEA countries, but rather as a primer that sets out information adequate to the task at hand.
VI.1.2 Methodology

A wide range of sources have been consulted to generate the information necessary to ensure that the aims of this aspect of the study are met as well as provide answers to the relevant questions developed as part of the scope refinement. Drawing on multiple sources enables ready verification of key trends and presents a more robust basis upon which conclusions can be made. The sources consulted include:

- Public domain material (primarily sourced from the internet).
- Official publications into drilling related activity developed by the responsible parties in various countries, trade associations and other stakeholder groups.
- Responses provided by respondents either via interviews or the survey. Related questions were included as part of both tasks.

VI.2 Mineral Extraction through Drilling Activity in the EU and EEA Countries

VI.2.1 Forms of mineral extraction through drilling activity being undertaken

A range of minerals extracted through drilling in EU and EEA countries have been identified via the interviews and survey. The identified activities include:

- Oil and gas extraction - onshore.
- Oil and gas extraction - offshore.
- Shale gas / oil extraction.
- Coal bed methane extraction.
- Underground coal gasification.
- Salt extraction (including Brine).
- Sulphur extraction.
- Water extraction.
- Natural CO₂ extraction.
- Gas storage in depleted gas fields.
- Gas storage in domes.
- Carbon (capture and) storage.
- Geothermal.
- Exploratory drilling and taking core samples for minerals to mine (e.g. for coal or metal ores).

Not all the activities listed above involve actual “extraction” of minerals, for example storage of carbon dioxide and gas on the contrary involves putting a substance into the ground, although the later involves subsequent extraction. Also geothermal is not for the material (water) being extracted (and returned), but is for its heat content. The common thread that exists between all these activities is that they involve drilling.
The mineral extraction activities identified above take place both on land and offshore. Generally speaking, the activities that take place offshore are hydrocarbon related (extraction and storage), although carbon (capture and) storage was also discussed as an offshore activity (either happening today or under consideration for the future).

Figure VI.1 shows the number of EU and EEA countries undertaking the mineral extraction through drilling activities listed above. It is based on the responses received from the regulatory authorities as part of the “survey”, the “interviews”, or both. Information was received from twenty two of the thirty EU and EEA countries. The countries from which no information was received at the time of compiling this report are: Belgium, Bulgaria, Estonia, Finland, Greece, Malta and Slovakia. No information was sought from Lichtenstein.

The figure indicates:

- Geothermal, core sampling and water extraction are the most widespread extraction through drilling activities.

- Onshore oil and gas extraction activities (exploratory and/or production) takes place in at least 14 of the 30 EU and EEA countries. This is consistent with the Eurostat data outlined in Table VI.1 below.

- The number of countries involved in offshore oil and gas extraction through drilling activities (exploratory and/or production) is marginally lower at 12. As for the above, this data is consistent with the Eurostat data outlined in Table VI.1 below for countries that currently producing.

- Only two countries (Austria and Poland) are involved in sulphur extraction via drilling.
VI.2.2 Oil & Gas

Oil and gas extraction is arguably the highest risk of all the mineral extraction through drilling activities taking place in EU and EEA countries. Given this, together with the fact that offshore oil and gas extraction are a focus for this work, additional information on the current level of both traditional oil and gas drilling and production activity, as well as discussion on shale gas/oil extraction is presented in this and the next section respectively.

Oil and gas extraction through drilling is currently a widespread mineral extraction in the EU and EEA countries. Sixty per cent of the EU and EEA countries are currently involved in oil and gas extraction (i.e. production). This percentage increases when including countries which are exploring for oil and gas with the hope of future oil and gas production.
VI.2.2.1 Production

Using the metric of tonnes of oil equivalent (MTOE), the total production of crude oil and natural gas in the EU and EEA countries in 2010 was 432 million tonnes of oil equivalent (Eurostat Statistics Database, 2012). Natural gas accounted for 58% of production and crude oil 42%. Table VI.1 and Figure VI.2 show the overall production and the proportion of oil and gas in each country that reported non-zero production in 2010. Norway, the UK and the Netherlands together accounted for 84% of the European total production.

<table>
<thead>
<tr>
<th>Country</th>
<th>Production Quantity (MTOE)</th>
<th>(% of EU/EEA)</th>
<th>Oil (%)</th>
<th>Gas (%)</th>
<th>Onshore (%)</th>
<th>Offshore (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>187.36</td>
<td>43.32%</td>
<td>50%</td>
<td>50%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>United Kingdom</td>
<td>111.18</td>
<td>25.71%</td>
<td>54%</td>
<td>46%</td>
<td>2%</td>
<td>98%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>64.47</td>
<td>14.91%</td>
<td>2%</td>
<td>98%</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Denmark</td>
<td>19.82</td>
<td>4.58%</td>
<td>63%</td>
<td>37%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Poland</td>
<td>12.92</td>
<td>2.99%</td>
<td>33%</td>
<td>67%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>12.22</td>
<td>2.83%</td>
<td>21%</td>
<td>79%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>12.04</td>
<td>2.78%</td>
<td>43%</td>
<td>57%</td>
<td>88%</td>
<td>12%</td>
</tr>
<tr>
<td>Poland</td>
<td>4.39</td>
<td>1.02%</td>
<td>16%</td>
<td>84%</td>
<td>79%</td>
<td>21%</td>
</tr>
<tr>
<td>Hungary</td>
<td>2.97</td>
<td>0.69%</td>
<td>25%</td>
<td>75%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Austria</td>
<td>2.37</td>
<td>0.55%</td>
<td>37%</td>
<td>63%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>1.56</td>
<td>0.36%</td>
<td>59%</td>
<td>41%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Czech Republic</td>
<td>0.35</td>
<td>0.08%</td>
<td>52%</td>
<td>48%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>0.32</td>
<td>0.07%</td>
<td>100%</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>0.18</td>
<td>0.04%</td>
<td>71%</td>
<td>29%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>0.12</td>
<td>0.03%</td>
<td>94%</td>
<td>6%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Lithuania</td>
<td>0.12</td>
<td>0.03%</td>
<td>100%</td>
<td></td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Slovakia</td>
<td>0.10</td>
<td>0.02%</td>
<td>13%</td>
<td>87%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Slovenia</td>
<td>0.01</td>
<td>0.00%</td>
<td></td>
<td></td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>432.49</td>
<td>100.00%</td>
<td>42%</td>
<td>58%</td>
<td>16%</td>
<td>84%</td>
</tr>
</tbody>
</table>

The data above shows good agreement\(^1\) with the information provided as part of the interviews - samples of which are outlined below.

- According to data provided by the Norwegian Petroleum Directorate (NPD, 2012). The total production of hydrocarbons produced in Norway in 2010 amounted to 230 million standard m\(^3\) oil equivalent.
- Oil and Gas UK give the volume of oil and gas produced in the UK in 2010 as 810 million boe. (Oil and Gas UK, 2012).
- Although the Netherlands does produce oil, it is primarily a gas producing country (as demonstrated in Table VI.1 above). The total gas production in 2010 is reported as 85 billion m\(^3\) (TNO, 2011).
- In Denmark, 14.2 million m\(^3\) of oil was produced in 2010; 8.1 billion normal m\(^3\) of gas was produced in the same year (DEA, 2010).

\(^1\) The following typical conversion factors have been assumed:
- 1 boe = 0.146 toe
- 1 Sm\(^3\) Natural Gas = 0.00084 toe
- 1 Sm\(^3\) of Crude Oil = 0.84 toe

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Weighting the data in the above figure by the overall quantities of oil and gas production in each country indicated in Table VI.1, it is estimated that overall 16% of the production in Europe is from onshore fields and 84% from offshore fields. The onshore production occurs mainly in the Netherlands, Poland, Germany and Italy. The offshore production occurs mainly in Norway, the UK, the Netherlands and Denmark.

The overall trend in production is declining, with total production in 2010 only 75% of that in 2000, although still 10% higher than it was in 1990.

**VI.2.2.2 Drilling**

There are no comprehensive statistics on well drilling in Europe. Table VI.2 presents forecast data for offshore drilling in EU/EEA waters developed by World Oil (World Oil, 2012). It shows that in 2012, Norway and the UK are expected to account for over 80% of oil and gas exploration and production drilling activity in EU and EEA countries.
Table VI.2  Offshore Drilling Forecast, 2012

<table>
<thead>
<tr>
<th>Country</th>
<th>Wells Drilled</th>
<th>% of all Offshore Wells drilled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>178</td>
<td>42%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>168</td>
<td>40%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>25</td>
<td>6%</td>
</tr>
<tr>
<td>Italy</td>
<td>25</td>
<td>6%</td>
</tr>
<tr>
<td>Denmark</td>
<td>21</td>
<td>5%</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>425</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Data on drilling activity supplied as part of the interviews is presented below. Comparison of both data sets (where possible) indicates both data sets are broadly consistent.

- In Norway oil and gas drilling activity totalled 172 wells in 2010, all offshore. This includes exploration (26%) and production (74%) drilling. The number in 2011 was similar, and below the peak of 228 in 2009. This is consistent with the forecast from World Oil (2012) in Table VI.2 for offshore drilling in Norwegian waters.

- UK oil and gas drilling activity totalled 213 wells in 2010. This includes offshore (90%) and onshore (10%). It includes exploration and appraisal (35%) and production (65%) drilling. The trend is declining and 2011 was unusually low, especially for offshore exploration. This is consistent with the forecast from World Oil (2012) in Table VI.2 for offshore drilling in the UK waters.

- An average of 20 wells have been drilled per year in the Dutch continental shelf over the period from 2007 till 2010. The drilled wells are split more or less equally between exploration/appraisal and production wells (TNO, 2011). This data is consistent with the forecast from World Oil (2012) in Table VI.2 for offshore drilling in Dutch waters.
  - In terms of drilling activity for the entire oil and gas sector (i.e. both on/offshore), a total of 58 wells were drilled in 2010 (an increase of six versus 2009). 21 of these were offshore (exploration – 7 wells; Appraisal – 2 wells; Production – 12 wells). The other 37 were onshore (exploration – 3 wells; Production – 36 wells).
  - There has been a marked increase in the number of wells drilled for geothermal extraction.

- In Denmark, drilling activity averaged 4 exploration wells and 15 production wells in the last 10 years, on a declining trend. This is consistent with, but a little lower than, the forecast from World Oil (2012) in Table VI.2 for offshore drilling in Danish waters.

- Poland was unable to provide overall data on oil and gas drilling, however one operator that produces 50% of Poland’s oil and gas planned 150 onshore wells and up to 5 offshore wells per year during 2012 to 2016. Poland is part of “others” for the World Oil (2012) and this data would indicate the World Oil data to potentially be on the low side for “others”.

- Poland was unable to provide overall data on unconventional oil and gas drilling. There have been 27 shale gas wells, with 248 planned up to 2017. In 2011, one company drilled 28 exploration wells, 5 production wells and 1 well for gas storage, all onshore.
VI.2.3 Shale Gas

“Shale gas”/ “Shale oil” are terms used to refer to hydrocarbon gas deposits contained within underground shale basins. The current technological solution to extracting the deposits utilises an approach that combines orthodox drilling techniques with hydraulic fracturing and the use high pressure fluids to fracturing the geology and release trapped hydrocarbon. This approach in relation to shale gas extraction is more commonly referred to as “fracking”. Where, the phrase “shale gas extraction” is used in literature, it generally refers to the extraction of shale gas utilising this technology. The term holds the same meaning in the context of this report.

It is important to recognise that there is a distinction between “fracking” (as defined above and applied to shale gas) and “hydraulic fracturing” which is a well-established procedure used to improve the viability of traditional wells. More than 10% of the onshore wells drilled in the UK in the last 30 years have been hydraulically fractured to enhance recovery (Royal Society, 2012). More recently, the technology has been used to make a field in the UK sector of the North Sea viable (Centrica Energy, 2012).

The situation with regards to onshore shale gas extraction in EU and EEA countries is mixed. A moratorium on any shale gas activity is currently in place in in some countries (e.g. France and Bulgaria). Note that the restriction here relates to the use of the hydraulic fracking technology as opposed to an outright ban on shale gas extraction.

A number of potential sites for onshore shale gas activity have been identified within the UK; however hydraulic fracking has only taken place at one site (Royal Society, 2012). This is in relation to exploratory activity as opposed to full-sale production.

Onshore shale gas exploratory activity is also known to be taking place in the following countries: Austria, Germany, Hungary, Ireland, Poland and Sweden (Ernst and Young, 2011). There are no known instances of shale gas production activity within the EU at the current time.
VI.2.4 Future Considerations
It should be noted that the sector is in a state of flux. As indicated above, production levels in key locations are on the decline; new technology is making previously inaccessible locations (e.g. deep-water and arctic locations) accessible and economically attractive. Furthermore, there have been discoveries of commercial quantities of oil and gas in newer locations (for example, in Cypriot Mediterranean waters). Changing attitudes to shale gas or changes in the technology might also affect the current dynamic. What this means that the current profile can be expected to change significantly in the future.

Furthermore, the bulk of oil and gas activity takes place in relatively “easy” to reach locations (onshore and offshore). Going forward, drilling activity is expected to move to areas that are more remote, deeper and more environmental challenging; factors that present particular specific challenges of their own.

VI.3 Type of Exploration and Production Organisations
Mineral extraction activity is generally dominated by private sector organisations. Despite the fact the ownership structures for these organisations vary from “100% private sector” to “shared ownership between the state and private sector investors”; they all operate as private sector players with full responsibility to shareholders and in some cases shares listed on stock exchange.

Private sector organisations that have the state as shareholder (minority or majority) do not enjoy any special concessions. They are treated in the same way as organisations that are fully owned by private sector entities and subject to the same controls, rules and regulations.

More specifically:

- In the UK, France, Ireland and Cyprus, all exploration and production activity is conducted by the private sector.
- The same applies to Norway, although the Norwegian State has a financial interest in some licenses which it manages via an entity called Petoro AS (also deemed to be a licensee holder). Furthermore, the state owns 67% of the shares of Statoil, an international organisation who is a key player in both the local (i.e. Norwegian Oil and Gas sector) as well as globally (NB. It has operations in 41 countries). Statoil is also listed on the Oslo and New York stock exchanges.
- In the Netherlands, exploration and production is conducted by the private sector, but the state-owned EBN acts as a co-financier and is deemed to be a license holder, although full legal responsibility for safe operation lies with the operator.
- In Denmark, exploration and production is conducted by the private sector, but the state-owned Nordsøfonden participates with a 20% stake in most licences.
- In Poland, exploration and production is conducted by the private sector, but the state is a majority shareholder.
- In Poland, there are two major operators. Romgas is a state-owned enterprise, 85% owned by the state. Petrom was privatised in 2004 and 21% owned by the state.
VI.4 Accident Data and Trends

Presenting comprehensive safety performance data for the mineral extraction through drilling industry from a pan–European perspective is challenging as the data is not readily available. For instance, the key pan-European database (Eurostat2) contains limited / no data specific to the mineral extraction industry in the EU. Most countries collate data based on the situation in their country and, through the interview, some of the stakeholders provided the available data for their country for this review. This has tended to focus on the oil and gas industry.

A summary of accident data for seven countries, namely Denmark, Ireland, Netherlands, Norway, Poland and United Kingdom, is presented in this appendix. This is based on information provided by various stakeholders in these countries during the interview sessions. For some countries, the supplied data is specific to the oil and gas industry; in others it is subsumed within statistics for the wider sector (e.g. mining activity). Additional data from the International Association of Oil and Gas producers (OGP) is also presented. The accident metrics considered are:

- Fatalities.
- Injuries (Lost Time Injuries).
- Uncontrolled hydrocarbon leaks (widely used as a proxy indicator for the level of major accident risk).

Taken as a whole, this evidence base supports the view that safety related performance in the offshore industry has improved in recent times, particularly over the last decade (i.e. over the long term view). The short term data (i.e. over the last few years) where available, is variable and in general shows a static trend (i.e. no clear reductions can be observed). Consequently, the broad summary is that whilst safety performance has improved markedly over the last 10 to 20 years, recent data suggests it has plateaued.

VI.4.1 Denmark

Overall Summary

Whilst the various metrics reviewed show a degree of variation (both upwards and downwards) or in some cases a “plateau” in the short term data (i.e. over the last few years), a marked decrease can be clearly observed in the long term trend (i.e. over the decade). This evidence base supports the view that safety related performance in the offshore industry has improved in recent times.

Furthermore, the safety performance of the offshore sector is seen to be better than that which obtains in other onshore sectors.

2 See http://epp.eurostat.ec.europa.eu/portal/page/portal/health/health_safety_work
Occupational Illness

- No trend data provided in the latest annual report (DEA, 2011). Data provided limited to year on year. In 2010, 20 reports were made; in 2009, 19 reports were made. The reports are dominated by hearing injuries and musculoskeletal disorders.

Fatal Incidents

- No trend data provided in the latest annual report (DEA, 2011) or in the previous one (DEA, 2010). However, feedback from the interview with the regulator indicates there has been 1 fatality during the past 10 years.

Injuries

- The number of work-related accidents on offshore installations have reduced by a factor of two over the period from 2004 (45) to 2011 (17), see Figure VI.3.

- The accident rate (measured per million worker hours) is also seen to have a downward trend over a similar period (2002 – 2011), see Figure VI.4.

Figure VI.3 Number of work related accidents on offshore installations, 2004 – 2011 (DEA, 2011)
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

Figure VI.4 Offshore Accident Frequency, 2002 – 2011 (DEA, 2011)

Hydrocarbon Releases

Hydrocarbon releases (HCRs) are commonly used as an indicator of major accident risk. At the macro level, the reported data (in DEA 2011) shows a long term reduction over the period 2005 to 2011. More specifically, the number of “Significant Releases” has increased steadily over from 2008 to date, following a marked reduction from 2005 to 2008.

Accident Frequencies – Comparison with Other Industries

Statistics relating to accident frequencies in Danish offshore and onshore industries are shown in Table VI.3 and Table VI.4. It has been noted that the data presented in these figures are not directly comparable due to some differences in the calculation basis. Nevertheless, the data is instructive and suggests that the offshore sector has a better accident record in comparison to other onshore industries.

Table VI.3 Accident frequencies in Danish offshore and onshore industries (DEA, 2010)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
</tr>
<tr>
<td>Offshore Installations*</td>
<td>7.1</td>
</tr>
<tr>
<td>Total Onshore Industries</td>
<td>10.2</td>
</tr>
<tr>
<td>Of which:</td>
<td></td>
</tr>
<tr>
<td>• Shipyards</td>
<td>38.5</td>
</tr>
<tr>
<td>• Earthwork, building and road construction</td>
<td>21.3</td>
</tr>
<tr>
<td>• Masonry, joinery and carpentry</td>
<td>15.0</td>
</tr>
<tr>
<td>• Insulation and installation work</td>
<td>16.1</td>
</tr>
<tr>
<td>• Chemical industry</td>
<td>12.4</td>
</tr>
<tr>
<td>• Heavy raw materials and semi-manufacturers*</td>
<td>12.7</td>
</tr>
</tbody>
</table>

* Overall accident frequency for fixed offshore installations and mobile offshore units.

** “Heavy raw materials and semi-manufacturers” covers many industries. For example, some of the subgroups within “Heavy raw materials and semi-manufacturers” include the extraction of crude oil and natural gas and technical services related to oil and gas extraction activities.
Table VI.4 Accident frequencies in Danish offshore and onshore industries (DEA, 2011)

<table>
<thead>
<tr>
<th>Industry</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offshore Installations</td>
<td></td>
</tr>
<tr>
<td>Total Onshore Industries</td>
<td>9.5</td>
</tr>
<tr>
<td><strong>Of which:</strong></td>
<td></td>
</tr>
<tr>
<td>- Completion of construction projects</td>
<td>16.0</td>
</tr>
<tr>
<td>- Energy and raw materials</td>
<td>7.8</td>
</tr>
<tr>
<td>- Installation/repair of machinery and equipment</td>
<td>9.4</td>
</tr>
<tr>
<td>- Chemical and medical industries</td>
<td>8.7</td>
</tr>
</tbody>
</table>

*) Overall accident frequency for fixed offshore installations and mobile offshore units

VI.4.2 Ireland

Overall Summary

The data shows that the mining industry (and by association the mineral extractive industry), though not the best performer, compares favourably to other industries in terms of fatalities and has a much lower incidence relative to the “Construction” and “Agriculture, forestry and fishing” industries.

Occupational Illness

No specific data on occupational illness in the mineral extractive industries in Ireland has been found. However, some data on illness in the entire economic sector tagged “industry” (which is understood to include the activities that fall under mineral extraction) is presented in HSA (2011) for the year 2009, (see Figure VI.5 and Table VI.5). As the data is presented for a single year only, it is not possible to indicate what the trend data over the years has been. For year reported (2009), however, the data in these figures together show that the “industry” sector is an average performer, the rate of injury being almost midway across all the sectors considered.

![Figure VI.5 Rate of illness (any days lost) per 1000 workers by economic sector (HSA, 2011).](image)
Table VI.5 Number and rate of injury/illness by economic sector and gender sector (HSA, 2011)

<table>
<thead>
<tr>
<th>NACE Economic Sector</th>
<th>Number employed</th>
<th>Injury rate per 1000 workers</th>
<th>Illness rate per 1000 workers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>A Agriculture, forestry and fishing</td>
<td>72,700</td>
<td>8,000</td>
<td>22.6</td>
</tr>
<tr>
<td>B-E Industry</td>
<td>176,700</td>
<td>65,700</td>
<td>17.2</td>
</tr>
<tr>
<td>F Construction</td>
<td>118,800</td>
<td>10,300</td>
<td>17.7</td>
</tr>
<tr>
<td>G Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>131,100</td>
<td>135,700</td>
<td>32.7</td>
</tr>
<tr>
<td>H Transportation and storage</td>
<td>75,400</td>
<td>17,500</td>
<td>28.6</td>
</tr>
<tr>
<td>I Accommodation and food service activities</td>
<td>55,900</td>
<td>67,800</td>
<td>44.5</td>
</tr>
<tr>
<td>J Information and communication</td>
<td>52,600</td>
<td>21,500</td>
<td>9.8</td>
</tr>
<tr>
<td>K-L Financial, insurance and real estate activities</td>
<td>48,600</td>
<td>54,900</td>
<td>0.0</td>
</tr>
<tr>
<td>M Professional, scientific and technical activities</td>
<td>60,500</td>
<td>41,400</td>
<td>9.0</td>
</tr>
<tr>
<td>N Administrative and support service activities</td>
<td>29,200</td>
<td>29,800</td>
<td>17.4</td>
</tr>
<tr>
<td>O Public administration and defence; compulsory social security</td>
<td>53,300</td>
<td>52,600</td>
<td>18.4</td>
</tr>
<tr>
<td>P Education</td>
<td>40,300</td>
<td>107,300</td>
<td>0.0</td>
</tr>
<tr>
<td>Q Human health and social work activities</td>
<td>42,100</td>
<td>189,900</td>
<td>39.8</td>
</tr>
<tr>
<td>R-U Other NACE activities</td>
<td>39,200</td>
<td>59,000</td>
<td>40.8</td>
</tr>
<tr>
<td>Total</td>
<td>996,400</td>
<td>861,400</td>
<td>21.6</td>
</tr>
</tbody>
</table>

* The rates in this table are based on total injury and illness figures. There is insufficient data for 4+ day injuries and illness by gender

Fatal Incidents

No data on the specific numbers of fatalities in the mineral extractive industries in Ireland has been found. However, according to (HSA, 2011, see Table VI.6) in the mining and quarrying industry, which comprises the following activities; mining of coal and lignite, extraction of crude petroleum and natural gas, mining of metal ores, other mining and quarrying and mining support service activities) there were no fatalities in 2010; 2 in 2009 and 1 in 2008 (i.e. 3 fatalities in the period between 2008 and 2010). Over the same period, this is similar to what obtains in other economic sectors and is much lower than the construction sector (31 fatalities), agriculture, forestry and fishing (64 fatalities), transportation and storage (12 fatalities).
In the same reference, the fatality rate per 100,000 workers is given for a range of economic sectors for the period covering 2004 to 2010 (See Table VI.7). This shows the rate for the economic sector tagged “other production industries” (which is understood as incorporating the mineral extractive industries) to be 1.3. “Human health and social work” activities has a rate of 0.4. The bulk of economic sectors have a rate of approximately 1. This indicates that the mining sector compares favourably with other industries in terms of fatality rate per 100,000 workers. It is much lower (by a factor of 24) than “agriculture, forestry and fishing” industry (30.6) and three times lower than the rate in the construction industry (4.5).
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

MANAGING RISK

Table VI.7 Rate of reported worker fatalities by economic sector 2004-2010 (HSA, 2011)

<table>
<thead>
<tr>
<th>Economic Sector</th>
<th>Rate of fatalities per 100,000 workers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2004</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>13.3</td>
</tr>
<tr>
<td>Construction</td>
<td>6.6</td>
</tr>
<tr>
<td>Education</td>
<td>0.8</td>
</tr>
<tr>
<td>Financial and other business services</td>
<td>0.4</td>
</tr>
<tr>
<td>Health</td>
<td>0.5</td>
</tr>
<tr>
<td>Hotels and restaurants</td>
<td>-</td>
</tr>
<tr>
<td>Other production industries</td>
<td>1</td>
</tr>
<tr>
<td>Other services</td>
<td>1.7</td>
</tr>
<tr>
<td>Public administration and defence</td>
<td>-</td>
</tr>
<tr>
<td>Transport, storage and communication</td>
<td>5.2</td>
</tr>
<tr>
<td>Wholesale and retail trade</td>
<td>1.5</td>
</tr>
<tr>
<td>New Category – Administrative and support service activities</td>
<td>-</td>
</tr>
<tr>
<td>New Category – Other NACE activities</td>
<td>-</td>
</tr>
<tr>
<td>New Category – Professional, scientific and technical activities</td>
<td>-</td>
</tr>
<tr>
<td>New Category – Transportation and storage</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>2.5</td>
</tr>
</tbody>
</table>

Injuries

No specific data on injuries in the mineral extractive industries in Ireland has been found. Data on injuries in the economic sector “mining and quarrying” (which is understood to include the activities that fall under mineral extraction) for the year 2010 is presented in Table VI.8. This shows that the number of reported injuries (independent of the number people employed in the sector) is much lower than that observed in other industries. The same trend is observed when considering the injury rate per 1,000 workers (drawing on the input for “industry” shown in Figure VI.16).
Table VI.8 Injuries reported by economic sector 2010 (HSA, 2011)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human health and social work activities</td>
<td>1384</td>
<td>19%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1262</td>
<td>17.3%</td>
</tr>
<tr>
<td>Public administration and defence; compulsory social security</td>
<td>1030</td>
<td>14.1%</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>1028</td>
<td>14.1%</td>
</tr>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>614</td>
<td>8.4%</td>
</tr>
<tr>
<td>Construction</td>
<td>571</td>
<td>7.8%</td>
</tr>
<tr>
<td>Other service activities</td>
<td>210</td>
<td>2.9%</td>
</tr>
<tr>
<td>Administrative and support service activities</td>
<td>184</td>
<td>2.5%</td>
</tr>
<tr>
<td>Accommodation and food service activities</td>
<td>175</td>
<td>2.4%</td>
</tr>
<tr>
<td>Education</td>
<td>160</td>
<td>2.2%</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>147</td>
<td>2.0%</td>
</tr>
<tr>
<td>Information and communication</td>
<td>129</td>
<td>1.8%</td>
</tr>
<tr>
<td>Water supply; sewerage, waste management and remediation activities</td>
<td>122</td>
<td>1.7%</td>
</tr>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>86</td>
<td>1.2%</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>54</td>
<td>0.7%</td>
</tr>
<tr>
<td>Professional, scientific and technical activities</td>
<td>54</td>
<td>0.7%</td>
</tr>
<tr>
<td>Arts, entertainment and recreation</td>
<td>46</td>
<td>0.6%</td>
</tr>
<tr>
<td>Electricity, gas, steam and air conditioning supply</td>
<td>14</td>
<td>0.2%</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>14</td>
<td>0.2%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7,284</strong></td>
<td></td>
</tr>
</tbody>
</table>

Figure VI.6 Rate of injuries (any days lost) per 1000 workers by economic sector 2009 (HSA, 2011).
VI.4.3 Netherlands

Overall Summary

Accident statistics over the last decade are presented in NOGEPA (2010). The data is presented in terms of “total number of industrial accidents” which is a combination of LTA + Fatal + Restricted work cases. The trend is rather flat with no step changes. The lowest number of industrial accidents was achieved in 2010. Additional data is shown in SSM (2012) which supports this.

Occupational Accidents

The occupational accident rate to the Netherlands offshore oil and gas industry is presented for recent years in Figure VI.7. The rate is relatively flat over the ten years from 2001 to 2010.

Figure VI.7 Accident frequency per million man hours for the Netherlands continental shelf

Uncontrolled hydrocarbon leaks

Figure VI.8 presents the number of major and significant oil and gas leaks for the Dutch oil and gas industry as published in their ministry’s annual report (Staatstoezicht op de Mijnen, 2011). The downward trend indicates an improvement given that production of gas has remained at the same order (~77,000 million Sm³ + or ---9,000 million Sm³ per year) over this period.
VI.4.4 Norway

Overall Summary

With regards to injuries, the long term data shows a decline, whilst the short term data indicates a plateau. No fatalities have occurred in recent times. There are a number of incidents of occupational illness (skin diseases due to exposure from chemicals). The limited data set indicates a decline in 2011 relative to 2010. The indicators for major accidents show a decline.

Occupational Illness

According to PSA (2011), 26 new cases of occupational skin disease were reported in 2011 (exposure to chemicals was the primary cause). This is a reduction of 10 compared with 36 cases in 2010.

Fatal Incidents

No fatal incidents in 2011. However, an instance of a missing person was reported and an investigation was initiated. It is not clear what the outcome was.

The last accident to result in a fatality in the Norwegian continental shelf occurred in 1997 and was as result of a helicopter crash.

Injuries

According to PSA (2011), a total of 330 personal injuries were reported in the oil and gas sector in 2011; 288 in 2010.
The number of serious personal injuries (per million man-hours worked) for both production and mobile facilities in the Norwegian continental shelf is shown in Figure VI.9 and Figure VI.10 respectively. Both figures indicate a reduction over the long term. The short term trend (i.e. over the last 2-3 years), though variable (albeit marginally), can be described as static.
Uncontrolled hydrocarbon leaks and major accident indicators

The Petroleum Safety Authority in Norway has undertaken a comprehensive analysis to seek to assess the trend in the major accident risk considering:

- Leakage of hydrocarbons in the process area.
- Loss of well control, blowout potential, well integrity.
- Leakage/damage to risers, pipelines and subsea facilities.
- Ship on collision course, structural damage.

From their measures they has assessed a major accident risk indicator value for their production facilities which is presented by year in Figure VI.11. This is showing a downward trend over the last 10 years. (Separately they also monitored helicopter risk indicators).

Figure VI.11 Major accident risk indicator for production facilities on the Norwegian continental shelf

VI.4.5 Poland

Overall Summary

The trend in the Polish mining industry with regard to occupational health and safety statistics has remained static over the period 2005 to 2009. There have been no fatalities for the last two decades. No other incident data (e.g. lost time injuries (LTI’s) / injuries) was provided or found.
Occupational Illness

Table VI.9 below shows the reported incidence data for occupational illness in the Polish mining industry as a whole and for four specific sectors; “coal mining”, “metal ore mining”, “oil and gas mining” and “other extractive” industries (it is not evident what industries fall under this category. The data shown covers the period between 2005 and 2009 and is presented for four key types of occupational illness, namely: silicosis, occupational impaired hearing, vibration syndrome, and bronchitis. A fifth category “other” is also reported. It is not clear what illnesses are included under this group. The data presented shows:

- Limited overall change over the four year period (3%). The overall incidence rate increased slightly from 2005 till it reached a peak in 2007 after which it reduced to 2005 levels.
- Occupational illness associated with coal mining dominates the dataset, followed by metal ore mining and “other extractive” industries. The occurrence of occupational illness in the oil and gas industry is almost negligible with no reported incidence in the 2008/9 period and a maximum of two cases reported per year over the period between 2005 and 2007.
- Whilst it is clear that the Occupational illness rate in the oil and gas sector is lower than that observed in other sectors, it is less clear what is driving the change. The change could be as a result of a lower possibility of occurrence in the sector (hence lower exposure), efficient risk mitigation practices or a combination of both.

<table>
<thead>
<tr>
<th>Occupational Illness</th>
<th>No of Occupational Illnesses Reported</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2005</td>
</tr>
<tr>
<td><strong>Coal Mining</strong></td>
<td></td>
</tr>
<tr>
<td>Silicosis</td>
<td>382</td>
</tr>
<tr>
<td>Occupational Impaired Hearing</td>
<td>60</td>
</tr>
<tr>
<td>Vibration Syndrome</td>
<td>30</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>-</td>
</tr>
<tr>
<td>Other Occupational Diseases</td>
<td>23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>495</td>
</tr>
<tr>
<td><strong>Metal Ore Mining</strong></td>
<td></td>
</tr>
<tr>
<td>Silicosis</td>
<td>10</td>
</tr>
<tr>
<td>Occupational Impaired Hearing</td>
<td>5</td>
</tr>
<tr>
<td>Vibration Syndrome</td>
<td>2</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>-</td>
</tr>
<tr>
<td>Other Occupational Diseases</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18</td>
</tr>
<tr>
<td><strong>Oil And Gas Mining</strong></td>
<td></td>
</tr>
<tr>
<td>Silicosis</td>
<td>-</td>
</tr>
<tr>
<td>Occupational Impaired Hearing</td>
<td>2</td>
</tr>
<tr>
<td>Vibration Syndrome</td>
<td>-</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>-</td>
</tr>
<tr>
<td>Other Occupational Diseases</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2</td>
</tr>
</tbody>
</table>
### Occupational Illness

<table>
<thead>
<tr>
<th>Occupational Illness</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicosis</td>
<td>5</td>
<td>6</td>
<td>9</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Occupational Impaired Hearing</td>
<td>5</td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Vibration Syndrome</td>
<td>4</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Other Occupational Diseases</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17</td>
<td>16</td>
<td>14</td>
<td>16</td>
<td>17</td>
</tr>
</tbody>
</table>

### Other Extractive Industries

<table>
<thead>
<tr>
<th>Occupational Illness</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Silicosis</td>
<td>397</td>
<td>428</td>
<td>489</td>
<td>466</td>
<td>409</td>
</tr>
<tr>
<td>Occupational Impaired Hearing</td>
<td>72</td>
<td>77</td>
<td>57</td>
<td>75</td>
<td>74</td>
</tr>
<tr>
<td>Vibration Syndrome</td>
<td>36</td>
<td>23</td>
<td>31</td>
<td>34</td>
<td>38</td>
</tr>
<tr>
<td>Bronchitis</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other Occupational Diseases</td>
<td>26</td>
<td>37</td>
<td>26</td>
<td>33</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>532</td>
<td>596</td>
<td>608</td>
<td>610</td>
<td>546</td>
</tr>
</tbody>
</table>

*According to Occupational Medicine Institute

### Fatal Incidents

The most recent instances of fatality in the oil and gas sector occurred around 20 years ago in 1994/5. No fatalities have been reported in the sector since then.

### VI.4.6 UK

The following is based on a review of HSE (2011).

#### Overall Summary

On the whole, a clear downward trend in this decade can be seen versus the last one – across all accident metrics. However, a degree of stagnation in the last 2 – 5 years can be seen across a number of indicators.

#### Occupational Illness

The trend can be described as relatively static over the 13 year period with around 15 to 20 incidents per year. A number of years had less than this amount, especially the last two periods. In 2009/10, 10 incidents were reported, this reduced to 7 in 2010/11.

#### Occupational Accidents

The occupational accident data is showing a continuous improvement over the last 15 years, see Figure VI.12. This is true for all reported accidents as well as major and fatal accidents. In fact for fatal accidents there have been none in the last four years, compared to greater than 1 per year from 95/96 to 2001/02. (It should be noted that the data presented in Figure VI.12 includes accidents for offshore wind activities in recent years).
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

Figure VI.12 UK occupational accident rate for the offshore industry

Figure VI.13 Accident rates by industry
Uncontrolled hydrocarbon leaks

Figure VI.14 presents the number for uncontrolled hydrocarbon releases in the UK offshore oil and gas industry as published by the Health and Safety Executive (HSE, 2011). The downward trend indicates an improvement at first sight. It needs to be recognised that this is against a background of falling oil and gas production from a relatively steady number of offshore facilities and workforce.

The current safety performance is clearly better than that in other industries when comparing the rates for the offshore oil and gas industry (in Figure VI.14) with the rates for other industries presented in Figure VI.13 (HSE, 2011).

VI.4.7 International Association of Oil and Gas producers (OGP)

The International Association of Oil & Gas Producers (OGP) has access to a wealth of data relating to the knowledge and experience of its members operating in diverse regions across the world on a range of diverse issues including but not limited to the magnitude of exploration/production activity, size of the work force and levels of safety performance.

The data it has collected and distilled relating to safety performance / accidents across the different regions is the primary focus of this section. This data is reported in OGP (2011) and this section presents a summary review of that data.
Figure VI.15 (reproduced from the above reference) shows the “Total recordable injury rate” per million hours worked across seven distinct geographical locations which loosely mirror the continents of the world (bar Antarctica):

- The cross region comparisons do not accord with what would be expected. The data shows that Europe, relative to other geographies has a high injury rate – higher than Africa, whereas it is clear that the regulatory regimes are much stronger in Europe and the prevailing climate/overriding attitude to safety is much higher. One possible explanation is variations in the level of reporting.

- Focussing unilaterally on the data presented for Europe, a marked reduction in the industry rate of the period 2006 to 2010 can be readily observed. A similar trend can is observed in the “Lost time Injury frequency” over the same period data presented in Figure VI.16.
VI.5 References


Danish Energy Agency (DEA), 2012 “Denmark’s Oil and Gas Production – and Subsoil use”. Available online at: [Accessed 13/09/12].

Danish Energy Agency (DEA), 2011, “Oil and Gas Production and Subsoil Use – Oil and Gas Production in Denmark 2011”. Available online at: [Accessed 13/09/12].


APPENDIX

VII

SURVEY QUESTIONNAIRE
VII. SURVEY QUESTIONNAIRE

VII.1 Introduction to Appendix

This appendix presents the survey which was developed and sent to stakeholders. Note that the introductory text used to introduce the review and the survey is not presented in this appendix.

The survey questions are extracted from the document agreed with the Commission and its Ad Hoc Steering Committee. Their numbering has been used to cross reference them to the review’s findings and discussion (see Section 6 of the main report), and hence to its recommendations (see Section 7 of the main report).
VII.2 Survey

VII.2.1 Demographic Questions

In this section an initial set of questions are asked.

The personal data provided in this section is for internal use only (administrative purposes) and will not be included in the final report.

1. Name

2. Contact details:
   - E-mail
   - Telephone number(s)
   - Address

3. Position(s):

4. Organisation(s):

5. Stakeholder type – select one only.
   a. Regulator (legislator).
   b. Regulator (enforcement authority).
   c. Regulator (combined legislator/enforcement authority).
   d. Employer (Note: the term “employer” is used here to denote any party responsible for fulfilling legislative obligations outlined within the national legislation that implements Directive 92/91).
   e. Worker Representative(s) (The phrase “Worker Representative(s)” is used here to denote the individual/group that represents the interests of the workforce on matters relating to health and safety).
   f. NGO.
   g. Other.

   If other then please state type of organisation:
6. EU/EEA country for which the survey responses apply – *select one only.*

<table>
<thead>
<tr>
<th>Country</th>
<th>Box</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>☐</td>
</tr>
<tr>
<td>Belgium</td>
<td>☐</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>☐</td>
</tr>
<tr>
<td>Cyprus</td>
<td>☐</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>☐</td>
</tr>
<tr>
<td>Denmark</td>
<td>☐</td>
</tr>
<tr>
<td>Estonia</td>
<td>☐</td>
</tr>
<tr>
<td>Finland</td>
<td>☐</td>
</tr>
<tr>
<td>France (includes French Guyana, Guadeloupe, Martinique, &amp; Reunion)</td>
<td>☐</td>
</tr>
<tr>
<td>Germany</td>
<td>☐</td>
</tr>
<tr>
<td>Greece</td>
<td>☐</td>
</tr>
<tr>
<td>Hungary</td>
<td>☐</td>
</tr>
<tr>
<td>Iceland</td>
<td>☐</td>
</tr>
<tr>
<td>Ireland</td>
<td>☐</td>
</tr>
<tr>
<td>Italy</td>
<td>☐</td>
</tr>
<tr>
<td>Latvia</td>
<td>☐</td>
</tr>
<tr>
<td>Liechtenstein</td>
<td>☐</td>
</tr>
<tr>
<td>Lithuania</td>
<td>☐</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>☐</td>
</tr>
<tr>
<td>Malta</td>
<td>☐</td>
</tr>
<tr>
<td>Netherlands</td>
<td>☐</td>
</tr>
<tr>
<td>Norway</td>
<td>☐</td>
</tr>
<tr>
<td>Poland</td>
<td>☐</td>
</tr>
<tr>
<td>Portugal (includes Azores and Madeira)</td>
<td>☐</td>
</tr>
<tr>
<td>Romania</td>
<td>☐</td>
</tr>
<tr>
<td>Slovakia</td>
<td>☐</td>
</tr>
<tr>
<td>Slovenia</td>
<td>☐</td>
</tr>
<tr>
<td>Spain (includes Canary Islands)</td>
<td>☐</td>
</tr>
<tr>
<td>Sweden</td>
<td>☐</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>☐</td>
</tr>
</tbody>
</table>
7. Which of the following activities which involve drilling take place in your country? – select “yes”, “no” or “do not know” for each of the activities listed

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Offshore oil and gas extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Onshore oil and gas extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Shale gas extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. Gas storage in depleted gas fields.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. Salt extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. Gas storage in domes.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. Sulphur extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h. Carbon capture and storage in depleted gas fields.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>i. Water extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>j. Geothermal.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>k. Taking core samples (e.g. for coal or metal ores).</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>l. Other.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

If “Yes” is selected for “l”, please state what other drilling activities take place in your country:

m. Do not know.

VII.2.2 Regulatory approach

The questions in this section relate to how Directive 92/91/EEC has been implemented in your country. Please note that when answering these questions that the questions are based around the structure for safety and health directives as depicted below and the assumption that national legislation will have a similar structure (i.e. a framework safety and health regulation with specific legislation for safety and health in different situations / environments / industries, although the specified different situations / environments / industries may be structured differently to the breakdown used by the European Commission):
8. What is the structure of safety and health in your country - Is the structure of safety and health legislation in your country fundamentally the same as that used by the EC for their safety and health directives (i.e. framework safety and health legislation with specific sub-legislation for safety and health in different situations / environments / industries)? – select one only.

a. Yes – and the specific sub-legislation for safety and health in different situations / environments / industries has the same or a very similar structure to that used by the European Commission.

b. Yes – however the specific sub-legislation for safety and health in different situations / environments / industries is different to that used by the European Commission.

c. No.

If “c” is selected, please outline the structure adopted in your country.

d. Do not know.
9. **How has Directive 92/91EEC been implemented in the national legislation in your country? – select one only.**

a. Directive 92/91/EEC has been directly transposed as a stand-alone piece of legislation with no or few edits, with pre-existing safety and health legislation for the mineral extraction through drilling industry being repealed. ☐

b. Directive 92/91/EEC has been directly transposed with no or few edits to lie alongside pre-existing safety and health legislation for the mineral extraction through drilling industry. ☐

c. The requirements of Directive 92/91/EEC are embedded in several different pieces of legislation which are applicable to the mineral extraction through drilling industry. ☐

d. The requirements of Directive 92/91/EEC have not been implemented in our country’s national legislation. ☐

e. Do not know. ☐

f. None of the above reflect how Directive 92/91/EEC has been transposed into legislation in our country. ☐

If “f” is selected please provide a description of how the requirements of Directive 92/91/EEC have been transposed into the legislation in your country:
10. Is the **national legislation** governing safety and health for workers at work in the mineral extraction through drilling industry “prescriptive” or “goal oriented”? - Which of the following sentences best reflects the implementation in your country? – **select one only**.

(Note; this question is concerned with the actual legislation — i.e. the letter of the law — as opposed to the any guidance documents or standards that might be used to support it or clarify its intentions).

- a. Goal oriented, with no prescriptive requirements. ☐
- b. Goal oriented, with very few prescriptive requirements. ☐
- c. Goal oriented, with some prescriptive requirements. ☐
- d. Both goal oriented and prescriptive (has many prescriptive requirements). ☐
- e. Pre-dominantly prescriptive with limited goal oriented aspects. ☐
- f. Fully prescriptive (there are no goal oriented aspects to our legislation). ☐
- g. Do not know. ☐

11. Does the national legislation that implements the requirements of Directive 92/91/EEC in your country require a “**risk assessment**” to be undertaken to assess the “**safety and health risks**” to people arising from the aforementioned drilling related activity? – **select one only**.

If “a”, what types of health and safety risks are typically assessed:

- a. Yes. ☐
- b. No. ☐
- c. Do not know. ☐
12. If you answered “yes” to Question 11, does the scope of the required “risk assessment” extend beyond “safety and health risks” to include other types of risks? – select all that apply

- Yes – Environmental.
- Yes – Loss of production.
- Yes – Asset damage.
- Yes – Other risks.
- No.

If “a” is selected please state which environmental hazards are routinely assessed with the safety and health risks:

- [ ]

If “d” is selected please state which risks:

- [ ]

13. Does the national legislation that implements the requirements of Directive 92/91/EEC require the legally responsible party to have a quality management system under which all aspects of health and safety related activity (for example risk assessments, safety reports, equipment, systems, etc.) must be developed and maintained? – select one only.

- Yes – An accredited quality management system (e.g. to ISO 9001) is required.
- Yes – However there is no requirement for the quality management system to be accredited to any standard.
- No.
- Do not know.
14. Does the national legislation that implements the requirements of Directive 92/91/EEC require the legally responsible party to have the health and safety documentation developed — all or part thereof — independently checked? — select all that apply.

   a. Yes – by an external independent person.
   b. Yes – by an independent person (internal or external).
   c. No.
   d. Do not know.

   If more than one selected please explain, also please outline what aspects require independent checks:

15. In your country, is there a requirement to submit the “Safety and Health Document” (or equivalent) to the regulator? — select one only.

   a. Yes.
   b. No – however they must submit a document confirming the Safety and Health Document (or equivalent) has been produced.
   c. No – and there is no need to inform the regulator that the Safety and Health Document (or equivalent) has been produced.
   d. Do not know.

16. If you answered “yes” to Question 15 above, does the “Safety and Health Document” (or equivalent) get assessed by the regulator for the following — select all that apply.

   a. Completeness – Confirming contents cover all those required by regulation.
   b. Quality of contents.
   c. Acceptability of level of safety and health risk.
   d. Other aspects:

   If “d” is selected please state what aspects:

If you answered “No” or “Do not know” to Question 15 please move to Question 18.
17. If you answered “yes” to Question 15 above, is the “Safety and Health Document” (or equivalent) formally approved or accepted by the regulator prior to allowing operations to start – select one only.

   a. Yes ☐
   b. No ☐
   c. Do not know ☐

18. Does the regulator review and approve other documentation (in addition to the “Safety and Health Document” or equivalent) as part of their safety and health regulatory oversight activities prior to allowing an activity (e.g. drilling production) to start? – select all that apply.

   a. Yes – The details of the well design is reviewed / verified by the regulator. ☐
   b. Yes – The details of the production facility design is reviewed / verified by the regulator. ☐
   c. Yes – Other details reviewed by the regulator. ☐

   If “c” is selected please state what other details are reviewed by the regulator:

   d. No. ☐
   e. Do not know. ☐

19. Does the national legislation that implements 92/91 in your country include a requirement to keep the “Safety and Health Document” (or equivalent) up-to-date? – select one only.

   a. Yes. ☐
   b. No. ☐
   c. Do not know. ☐
20. If you answered “yes” to Question 19 above, what factors would trigger an update to the “Safety and Health Document” (or equivalent)? – select all that apply.

- Major changes, extensions or conversions. □
- A legal requirement to update the document periodically. □

If “b” is selected, please state frequency.

- Reviewing the adequacy of existing assessments in the light of new technology. □
- Other. □

If “d” is selected please describe the other factors that would trigger an update:

21. The Directive 92/91/EEC requires a revision to the “Safety and Health Document” (or equivalent) if the workplace “has undergone major changes, extensions or conversions”. Does your national legislation that implements the requirements of Directive 92/91/EEC define what constitutes a “major change”? – select one only.

- Yes. □
- No. □
- Do not know. □

If “a” is selected please provide the definition of a “major change” from your legislation:

22. If you answered “yes” to Question 21 above, which of the following type of changes would fall under the definition provided above? – select all that apply.

- Equipment / physical changes. □
- Procedural changes. □
- Organisational changes. □
- Other changes. □

If “d” is selected please state other types of changes:
23. If you answered “yes” to Question 21 above, what is the protocol employed between the regulated party and the regulator in the context of these changes? - select only one.

a. Notification required prior to change, but no ratification required.
   ☐

b. Notification and ratification required prior to change.
   ☐

c. No notification or ratification required.
   ☐

d. Other.
   ☐

If “d” is selected please describe the process adopted:

24. Is there guidance available in your country to help support industry to successfully comply with the requirements of the legislation governing safety and health for workers at work in the mineral extraction through drilling industry? – select all that apply.

a. Yes – from the regulator.
   ☐

b. Yes – from industry trade association.
   ☐

c. Yes – from unions.
   ☐

d. Yes – from others.
   ☐

If “d” is selected please state who:

a. No – however practice is to follow international standards to comply.
   ☐

b. No.
   ☐

c. Do not know.
   ☐

25. Does the regulator in your country run an anonymous reporting system that workers can use to report incidents—select only one?

a. Yes
   ☐

b. No
   ☐

c. Do not know.
   ☐
26. At the national level on what basis (if any), and at what frequency, are discussions held between the all primary stakeholders (i.e. regulators, industry and unions) in safety and health for workers at work in the mineral extraction through drilling industry? – select all that apply.

a. There are formal regular meetings between the primary stakeholders (i.e. regulators, industry and unions). These are required by the country’s legislation and take place several times in a year.

b. There are formal regular meetings between the primary stakeholders (i.e. regulators, industry and unions). However these are not a requirement of the country’s legislation. They take place several times in a year.

c. There are meetings between the primary stakeholders (i.e. regulators, industry and unions). These are organised on an as needed basis to address specific issues and take place several times in a year.

d. There are sometimes meetings between the primary stakeholders (i.e. regulators, industry and unions). These are organised on an as needed basis to address specific issues however are infrequent (i.e. occur less than once a year).

e. There are no meetings between the primary stakeholders (i.e. regulators, industry and unions) at the national level for the mineral extraction through drilling industry.

f. Do not know.

VII.2.3 Scope
The questions in this section relate to the scope of the national legislation in your country that implements the requirements of Directive 92/91/EEC.

They are targeted (in the first instance) at stakeholders that have legal responsibility for either implementing or enforcing the provisions of the Directive in the pertinent member state (i.e. Legislators, Regulators or both). However, it is recognized that other stakeholders, particularly the regulated parties (i.e. industry), can provide useful insights (as they potentially have a high degree of involvement with the Directive). As a consequence, responses from all stakeholder groups are welcome.

All questions in this section have a “Do not know” option listed as one of the possible responses; please select this choice in the event that you do not have direct or particular knowledge of the pertinent question.
27. Which of the following activities are covered by the national legislation that implements the requirements of Directive 92/91/EEC in your country? – select “yes”, “no” or “do not know” for each of the activities listed.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
<th>Do not know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Offshore oil and gas extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Onshore oil and gas extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>c. Shale gas extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>d. Gas storage in depleted gas fields.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>e. Salt extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>f. Gas storage in domes.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>g. Sulphur extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>h. Carbon capture and storage in depleted gas fields.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>i. Water extraction.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>j. Geothermal.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>k. Taking core samples (e.g. for coal or metal ores).</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>l. Other.</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

If “Yes” is selected for “l”, please state the other drilling activities covered:

28. What types of hazards to people are covered by the national legislation that implements the requirements of Directive 92/91/EEC in your country? - Which of the following sentences best reflects the implementation in your country? – select one only.

<table>
<thead>
<tr>
<th>Sentence</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. All of the hazards associated with the mineral extraction through drilling industry assets and activities which pose a risk of harm to people.</td>
<td>☐</td>
</tr>
<tr>
<td>b. Some of the hazards associated with the mineral extraction through drilling industry assets and activities which pose a risk of harm to people.</td>
<td>☐</td>
</tr>
<tr>
<td>c. None of the hazards associated with the mineral extraction through drilling industry assets and activities which pose a risk of harm to people.</td>
<td>☐</td>
</tr>
<tr>
<td>d. Do not know.</td>
<td>☐</td>
</tr>
</tbody>
</table>
29. If you answered “b” to the Question 28, which if the following hazards are covered – select all that apply.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Checked</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Occupational safety accidents (e.g. slips, falls from height, etc., these typically harm people on an individual basis).</td>
<td></td>
</tr>
<tr>
<td>b.</td>
<td>Occupational illness hazards (e.g. ear damage due to exposure to high noise level over an extended period, these typically harm people on an individual basis).</td>
<td></td>
</tr>
<tr>
<td>c.</td>
<td>Asset integrity major accident (e.g. loss of containment hydrocarbon – blowout or process equipment failure these have the potential to harm more than one person at a time).</td>
<td></td>
</tr>
<tr>
<td>d.</td>
<td>All other major accidents (e.g. severe weather, structural failure, these have the potential to harm more than one person at a time).</td>
<td></td>
</tr>
</tbody>
</table>

If you selected “d”, please state which:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.</td>
<td>Do not know.</td>
</tr>
</tbody>
</table>

Are there any other hazards associated with the mineral extraction through drilling industry assets and activities which pose a risk of harm to people which are not covered by the national legislation in your country?

30. Under what circumstances are the hazards identified in Questions 28 and 29 required to be assessed? – select one only.

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>All circumstances.</td>
</tr>
<tr>
<td>b.</td>
<td>Some (not all) circumstances.</td>
</tr>
<tr>
<td>c.</td>
<td>Do not know.</td>
</tr>
</tbody>
</table>
31. If you answered “b” to Question 30 above, which of the following circumstances are covered – select all that apply.

- a. Normal operations.
- b. Simultaneous (or Combined operations), e.g. drilling and production.
- c. Emergency situations.
- d. Other.

If “d” was selected, please state the other circumstances which are covered:

- e. Do not know.

If you answered “b” to Question 30 what are the circumstances which are not covered by the national legislation in your country?

32. Which of the following phases in the life cycle of the mineral extraction through drilling process does the national legislation that implements the requirements of Directive 92/91/EEC apply to for the workers involved in the specified activities? – select all that apply.

- a. Seismic operations (surveys, modelling, etc.).
- b. Exploration drilling.
- c. Production.
- d. Decommissioning/abandonment.
- e. Other.

If “e” is selected please state the other phases which are covered:

- f. Do not know.
33. The national legislation that implements the requirements of Directive 92/91/EEC is applicable for workers at work in the following steps in the life of an offshore exploration drilling activity? – select all that apply.

(This question is seeking to understand the point where there is a transition between the legislation that that implements the requirements of Directive 92/91/EEC and maritime legislation.)

- a. Transit of the exploration drilling rig within your territorial waters to/from the boundary of the concession. 
- b. Transit of the exploration drilling rig within the concession to/from the location for the exploration drilling.
- c. Initiation of locating at the drilling location (e.g. lowering a jack-ups leg(s) until it touches the sea floor, or for a semi-sub casting out the first anchor until it hits the sea floor).
- d. Completing the locating at the drilling location.
- e. Drilling preparation.
- f. Drilling up to point where drill bit touches the sea floor.
- g. Drilling up to point where drill bit comes in contact with hydrocarbons.
- h. Well completion / making the well safe to leave.
- i. Drilling shut down activities.
- j. Getting ready for departure from the drilling location (e.g. raising a jack-ups legs, or the anchor for a semi-sub).
- k. Do not know.
- l. Not applicable (e.g. no offshore waters).

34. For a production facility / site what stages are covered by your national legislation that implements the requirements of Directive 92/91/EEC? – select all that apply.

(It is recognised that other safety and health regulations will apply for any steps not selected with this question.)

- a. Construction.
- b. Commissioning.
- c. Production drilling.
- d. Production (including all activities from the end of commissioning to stopping production for decommissioning).
- e. Decommissioning.
- f. Do not know.
35. For a production facility / site what is the geographical extent of the facilities covered by your national legislation that implements the requirements of Directive 92/91/EEC? – select all that apply

(It is recognised that other safety and health regulations will apply to assets and activities not selected with this question.)

Onshore mineral extraction through drilling site

a. Inside the site boundary of the mineral extraction through drilling (exploration or production) site.

b. Pipelines from the site to another location/site.

c. Storage for extracted minerals received from the mineral extraction through drilling site at another location.

d. Processing equipment for extracted minerals received from the mineral extraction through drilling site at another location.

e. Do not know

Offshore mineral extraction through drilling installation

f. Production installation.

g. Within a defined zone /area from the installation.

If “g” is selected, please state how the zone / area is defined:

h. Pipelines to / from the installation.

i. Sub-sea wells and equipment associated with production from the installation.

j. Onshore storage for extracted minerals received from the production installation.

k. Onshore processing equipment for extracted minerals received from the production installation.

l. Do not know.
36. For an offshore mineral extraction through drilling operation which of the associated activities are covered by your national legislation that implements the requirements of Directive 92/91/EEC? – select all that apply.

(It is recognised that other safety and health regulations will apply for any activities not selected with this question, including your national safety and health framework legislation.)

- a. Not applicable (no offshore waters).
- b. Travel to/from a heliport or marine port.
- c. Time spent at the heliport or marine port.
- d. Helicopter flight / time on transport vessel to/from offshore facility.
- e. Time on offshore facility.
- f. Do not know.
- g. Support vessels
  - g. Travel to/from the production installation.
  - h. Movement and locating next to offshore installation.
  - i. Activities associated with purpose of visit (e.g. transfer / lifting of equipment and resources onto the installation).
  - j. Do not know.
- k. Diving
  - k. Preparation for and recovery from diving on a diving support vessel.
  - l. Dive to/from work location.
  - m. Work on installation and associated equipment (e.g. pipeline or sub-sea wells).
  - n. Do not know.

37. Which of the following groups of people at risk from the hazards are covered by your national legislation that implements the requirements of Directive 92/91/EEC? – select all that apply.

- a. Employees of the operating company working on an offshore installation or an onshore site.
- b. Employees of the contractors and sub-contractors company working on an offshore installation or an onshore site.
- c. Regulators when visiting an offshore installation or an onshore site (e.g. to undertake and investigation).
- d. All other visitors to an offshore installation or an onshore site.
- e. External emergency responders on an offshore installation (e.g. rescue workers from a sand-by vessel) and an onshore site (e.g. fire fighters) when responding to a major incident / accident.
- f. General public in the vicinity of (an offshore installation and/or) an onshore site.
- g. Do not know.
38. Under the national legislation that implements Directive 92/91 in your country, which party has **ultimate** legal responsibility for ensuring the Health and Safety of personnel on a facility (either offshore or onshore) or persons in the immediate vicinity? - **select the option(s) that best reflects the situation in your country.**

a. Licensee/Concession Holder. ☐
b. Operator (Note; the term “operator” is used here to denote the party responsible for day-to-day operations on the facility). ☐
c. Shared responsibility between “a” and “b” above. ☐
d. A hierarchy of responsibility applies to each party (for example each involved party is responsible for his/her own activity). ☐
e. Do not know. ☐
f. Other. ☐

If “f” is selected, please state who has ultimate legal responsibility:

VII.2.4 **Requirements, Practices and Enforcement**

The questions in this section relate to requirements of the national legislation in your country that implements the requirements of Directive 92/91/EEC and practices typically followed in your country to meeting them.
40. Does the regulator undertake announced and/or unannounced inspections of mineral extraction through drilling sites / installations? - select one only

a. Yes - announced ☐
b. Yes - unannounced ☐
c. No ☐

If “a” and “b” are selected, please state the ratio of unannounced inspection to announced inspections:

41. How frequently does the regulator inspect mineral extraction through drilling sites / installations to ensure that operations are in accordance with regulatory requirements and/or the safety and health documents? – complete responses in fields provided. If a question is not applicable (e.g. you have no offshore waters) please put down “not applicable” and state why.

a. Offshore exploration mineral extraction through drilling rig – Write the typical frequency(ies) and clearly define the drilling basis (e.g. given different typical frequencies for different drilling situations such as deep water vs. shallow water, etc.):

b. Onshore exploration mineral extraction through drilling rig – Write the typical frequency(ies) and clearly define the drilling basis:

c. Offshore production mineral extraction through drilling installation – Write the typical frequency(ies) and clearly define the production situation (e.g. given different typical frequencies for different production situations such as small unmanned platforms vs. large manned platforms, when there are simultaneous operations, etc.):

d. Onshore production mineral extraction through drilling installation – Write the typical frequency(ies) and clearly define the production situations basis (e.g. given different typical frequencies for different types of production oil vs. gas vs. salt vs. gas storage, etc.):
42. Does the regulator receive and review information on all drilling activities as they happen? – *select one only.*

a. Yes

If “a” is selected please state the frequency, type of information received and style of review:

b. No

**VII.2.5 Administrative burden**

The questions in this section explore the magnitude of the effort required to deliver compliance with the national legislation in your country that implements the requirements of Directive 92/91/EEC.
43. Is the effort required to comply with your national legislation that implements the requirements of Directive 92/91/EEC seen as being excessive compared by any of parties (regulator, legally responsible party, employers, worker representative, NGOs) with the safety and health benefits gained by different stakeholders? – select one only in each column.

Note this question related to your national legislation that implements the requirements of Directive 92/91/EEC and does not cover the other legislative requirements that an operator has to comply with.

a. **Burden highly excessive and unnecessary.**
The work to comply with your national legislation that implements the requirements of Directive 92/91/EEC is seen as significantly (and unnecessarily) more effort than a typical operator would take to comply with their own safety and health management system.

b. **Burden excessive but unnecessary.**
The work to comply with your national legislation that implements the requirements of Directive 92/91/EEC is seen as significantly (and unnecessarily) more effort than a typical operator would take to comply with their own safety and health management system.

c. **Burden appropriate and acceptable.**
The work to comply with your national legislation that implements the requirements of Directive 92/91/EEC is not seen as adding any additional unnecessary effort to that expended by a typical operator complying with their own safety and health management system. Extra effort is only that needed to support the regulator undertake their job and to provide assurance.

d. **Burden appropriate and acceptable.**
The work to comply with your national legislation that implements the requirements of Directive 92/91/EEC is seen as adding additional effort to that expended by a typical operator complying with their own safety and health management system in order to ensure a higher and acceptable level of safety than would be achieved otherwise. Extra effort is needed to raise the safety performance of the operator, support the regulator undertake their job and to provide assurance.

e. **Do not know.**

Please outline the basis for your answers:
VII.2.6 Future regulatory Approach

This section of the questions seeks your ideas on the need for and potential changes to the Directive 92/91/EEC and the need for and potential activities to be undertaken by the European Commission (and specifically Directorate General Employment, Social Affairs and Inclusion) to support EU Member States to implement national legislation and deliver safety and health for workers in the mineral extraction through drilling industry. For those stakeholders who have been interviewed please feel free in this section to make reference to suggestions recorded in your interview responses.

44. Is there a need for Directive 92/91/EEC to be modified? – select all that apply.

   a. Yes – Its content. 
   b. Yes - Its structure
   c. Yes – Form of legislative instrument (Directive, Regulation or other)
   d. Yes - Scope
   e. No

If you have selected “yes” to any of the options above, please state the changes you would like to see together with the underlying rationale. If “no” is selected please give your reason why you think no changes are needed.

45. Do you think the European Commission (and specifically Directorate General Employment, Social Affairs and Inclusion) should be doing other activities to support EU Member States to implement national legislation and deliver safety and health for workers in the mineral extraction through drilling industry, for example writing guidance documents, enabling support to countries with small or new mineral extraction through drilling activities, etc.? – select only one.

   a. Yes
   b. No
46. Is there a need to extend the scope of the directive to address environmental risks, liability, etc. (similar to the scope of the proposed offshore legislation? – select only one.

a. Yes □

If “a” is selected please indicate the range of risks that should be covered and the outline the rationale for their selection.

b. No □

47. Additional Comments.

If there are comments you would like to make as input to this review please add them here.
APPENDIX

VIII

SURVEY QUESTIONNAIRE: RESULTS
VIII. RESULTS OF SURVEY QUESTIONNAIRE

VIII.1 Introduction to this Appendix
This appendix outlines the results derived from the survey conducted as part of this project.

The purpose of this survey questionnaire was twofold. First, to enable engagement with stakeholders who were not interviewed (this aspect is discussed further in Section 3.5 of the Main Report). Second, to allow for key themes and insights developed as part of the face-to-face interviews to be explored further.

VIII.2 Survey Methodology

VIII.2.1 Survey Questionnaire: Design/Development
The survey questionnaire was officially developed in English using a Microsoft© Word© document template considering both the overall project objectives and the specific objectives for this aspect of the work (as outlined above).

It incorporates 47 questions which were designed to explore and examine the following key themes:

- Demographics.
- Current regulatory approach.
- Scope.
- Requirements, practices and enforcement.
- Administrative burden.
- Future regulatory approach.

The questions developed and used for the face-to-face interview sessions (See Appendices IV and V) as well as the insights / feedback gained from the actual sessions were used to inform the development. The response options adopted varied depending on the question, but generally included single answer (yes / no / other), multiple choice, “likert” scale input and free-field input.

An initial version was shared with the Ad-Hoc Working Group (AHWG) who provided critical feedback which allowed for refinement and further development prior to dissemination. The final version of the questionnaire is presented in Appendix VII.

VIII.2.2 Target Groups
The target group for the questionnaire comprised of all stakeholders groups, namely regulatory authorities, industry, workforce representatives and non-governmental organisations in all 30 EU member states / EEA countries (with the exception of Lichtenstein\(^1\)). Consequently, the number of countries engaged with in this survey amounted to 29.

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\(^1\) A summary review of the situation in Lichtenstein with regards to mineral extraction indicated the absence of any such activity; consequently, the country was not considered further in this work.
Appendix III (to the main report) outlines the countries / organisations / individuals who were engaged with as part of this survey.

**VIII.2.3 Survey Dissemination: Timeline/Approach**

The survey was disseminated via email around mid-August 2012 (immediately following the period within which the bulk of the face-face interviews had been conducted). The majority of responses were in late September / early October.

Respondents were asked to contact members of the project team if they had any questions or clarifications on the questionnaire. A number of requests were received and addressed.

**VIII.2.4 Response Rates**

In terms of stakeholder response rate (across the 29 EC member states / EEA countries):

- Responses were received from 25 countries. Of these:
  - 21 countries responded directly.
  - Responses to the survey were developed for 4 countries based on the information provided as part of the interview sessions. This was either by request (Denmark and Italy) or due to no responses being received to the survey (Germany and France).
  - Generally speaking, the highest response rate was achieved with the regulatory authorities within the countries, followed by the industry and workforce representatives. No responses were received from NGO’s who in general declined to provide input citing lack of expertise / knowledge of the particulars of the Directive.

- No responses were received from 4 countries. These were Belgium, Estonia, Malta and Bulgaria.

For the most part, the responses from the various stakeholders within each country have been consolidated to reflect a single view on the prevailing situation in each EU country/ EEA member state.

The information presented in this appendix is based on responses received till the 25th September 2012. It does not reflect responses received after this date. For example, following a clarification request, a revised submission was received from the authorities in the Czech Republic on 12th October 2012. This information is not reflected in this work.

**VIII.2.5 Data Analysis**

The data in the completed questionnaires was codified and transferred into a spread sheet based tool (Microsoft© Excel©) for analysis.

Notwithstanding the fact that the questionnaire was developed in a comprehensive manner, there were certain areas for which more in depth information was required to understand the underlying rationale

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2 At the time of compiling this report.
3 A letter was received from the Bulgarian authorities in response to the first six high-level questions of interview question set; however the information detailed therein was not sufficient to allow for responses to the survey to be developed. The question set and the Bulgarian response are detailed in Appendix IV and Appendix V.1 respectively.
4 In some cases, this involved resolution of any key conflicts in the information received from the stakeholders within the relevant country. In others, the position of the authorities (i.e. the regulator) was taken as definitive.
for the responses provided. This material was derived from a number of sources. In some cases, respondents had provided additional information either in the free-field text boxes preceding each question or in separate documents (i.e. as attachments) to the questionnaire. For those who had been interviewed, the interview record formed a rich source of data with which to contextualise the survey responses. In other instances clarifications were sought either via email or telephone.

VIII.2.6  Survey Outputs
The initial data output from the survey (based on initial, albeit limited responses) was shared with the Commission and the members of the AHWG at the interim project meeting held on the 5th of September 2012.

This report represents the primary deliverable of the survey.

VIII.3  Findings and Discussion
This section presents the findings of the survey. Recognising that the survey outputs of this exercise are to be considered in concert with the other sources of information, the data is presented largely “as is”, with a limited amount of additional contextual information.

Interpretation / contextualisation of the results presented here informs the findings and discussions presented in the main report, where wider background issues such as the scale, magnitude, importance and prevalence of the mineral extraction industry as well as other relevant factors are covered.

The qualitative data from the findings are presented diagrammatically (using a bar charts) in Section VIII.4 (at the end of this appendix). The results are discussed thematically in the sub-sections using the high level categories under which the questions were developed (as outlined in Section VIII.2.1 above).

Recognising that each country is different across diverse dimensions (e.g. types and quantity of minerals extracted, cultural and legal heritage, significance of the mineral extraction to the economy etc.), it is evident that there will be differences in how the associated national legislation is organised, developed and enforced. Consequently, the value of the results presented in this section rests not in highlighting that these differences exist, but rather in providing a better understanding of the extent / degree to which things differ and conversely, the degree to which they are the same.

VIII.3.1  Demographics
The focus of section was to identify the range of “mineral extraction through drilling activities” that take place across the various EC member states / EEA countries as well as develop an understanding of the prevalence of any one activity across the region.

This aspect was explored via Question 7 which outlined a list of pre-identified “mineral extraction through drilling activities” (largely identified via the interviews) and asked respondents to identify which activities were taking place in their locations. Respondents were also given the option to include any additional activities that take place beyond those listed. The results are shown in Figure 1.

This indicates:

- That the most prevalent drilling activities include oil and gas extraction (both on / off shore), geothermal activity, water extraction and core sampling. All these activities take place in at least 60% of the countries sampled (15 out of 25).
The least widespread (taking place in no more than two countries) are coal-bed gasification, underground coal gasification and natural CO₂ extraction.

VIII.3.2 Regulatory approach

This section included a series of questions (19 in all, Questions 8 to 26) designed to develop an understanding of the design, structure, organising principle and philosophy underpinning the national legislation that implements the requirements of the directive across the various EC member states / EEA countries. This section also explores aspects relating to the transposition / implementation of the directive into national legislation. The scope of the national legislation and how it is administered was also another theme examined in this section.

Although the provisions of the directive are largely targeted at the employer (understood to represent the legally responsible party), the national authority within each country is responsible for ensuring compliance with the provisions outlined therein (as per the requirements of Article 12 of the directive). In this regard, one aim of this section is to explore and examine the extent to which administrative practices are consistent or differ across the various EC member states / EEA countries considered as part of this review.

Overall, the following areas were explored:

- The requirement for a risk assessment.
- The scope of the risk assessment.
- Requirements for management systems.
- Development of the safety and health document as well as any approval / verification / assurance activities that follow thereon (in terms of oversight from the regulatory bodies, keeping it up to date, etc.).
- What is understood to represent / constitute a “major change, extension or conversion” and how they are managed.
- Availability of interpretative guidance (for the legislation).
- The use of anonymous reporting systems.
- The degree to which dialogue is undertaken between the primary stakeholder groups.

The following bullet points outline the key trends emerging from the analysis of the responses.

- For a large proportion of the countries who provided responses (22 out of 24), the national legislation that implements the requirements of the directive are broadly structured in a similar manner to the EC’s safety and health directives i.e. there is an overarching piece of legislation that applies to all industry sectors / situations which is supported by sector-specific legislation that addresses issues particular to a given area. (Question 8)

- **Question 9** explores the manner in which the directive has been implemented into the national legislation. Of 25 countries:
  - 11 have implemented the directive using several items of national legislation;
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- 6 have implemented it as a stand-alone piece of legislation with little or few edits and more importantly without changes to existing national legislation;
- Another 7 have implemented it in a standalone fashion, but in doing so have repealed any existing relevant legislation.
- In one country (Cyprus), there was no pre-existing legislation and the directive has been directly transposed with few edits.

- With regards to the organising principle / philosophy underpinning the national legislation across the various countries, the majority adopt a hybrid approach that combines both goal-setting (i.e. functional requirements) and prescriptive elements (albeit with some variation in the make-up, with some countries adopting a more goal-setting / prescriptive stance than others). At the extremes, only one country is observed to adopt either a fully goal-setting / fully prescriptive approach: Luxembourg in the former and Romania in the latter. (Question 10)
  - The general feedback from the interview sessions was that the direction of travel (in terms of future changes to national legislation) is towards a goal-setting approach. This is the case with countries who have recently modified their legislation (e.g. Denmark in 2005, Netherlands in 2003); or those who are currently in a state of transition (Ireland).

- All countries have a requirement to conduct a health and safety risk assessment as part of their national legislation that implements the requirements of the directive (Question 11). This requirement (i.e. the need to conduct a risk assessment) is central to the directive and the much wider EU Health Safety framework governed (by Directive 89/391/EEC). This response suggests that this requirement is well understood and fully implemented across the member states who responded to this question (n=24).

- The range of risk types covered (in addition to health and safety risks) by the national legislation that implements the requirements of the directive was the focus of Question 12. Generally speaking, the scope was limited to the assessment of health and safety risks only, although some countries (less than a third of those polled) had requirements to consider other adverse consequences in the risk assessment including:
  - Environmental impacts.
  - Asset damage.
  - Loss of production.

- Quality management systems are typically the means adopted to ensure the quality of an output of an activity. They are used in various industries and for different products. Such systems play an important role in the control of risks associated with operational activities (e.g. maintenance, access considerations i.e. permit to work, management of change, etc.). In the current context, the emphasis is on the use of such systems to ensure the quality of the outputs of the risk assessment work undertaken. Question 13 examines the extent to which the national legislation requires the use of such systems (either in a generic sense or with specific reference to a particular system, e.g. ISO 9001). The responses show that about 40% of all the respondents (i.e. 14 out of 25 countries) include requirements for the use of a management system as part of their national legislation. Of this group, only two countries—Netherlands and Norway—have an explicit requirement for the management system to be accredited to ISO 9001.
Question 14 looks at the degree to which the national legislation across the various countries require independent checks of the health and safety documentation (all or part thereof). The resulting picture is almost equally mixed. 14 of the 25 countries who provided responses do not require independent checks of any kind; whereas the other 12 do. Of these 12, 4 countries (Germany, Denmark, Spain, and Netherlands) require such checks to be conducted by independent person / entity wholly external to the responsible organisation (i.e. complete separation is required). In the other 8, such checks need to be executed by a party external to those who conducted the work and thus can be external or internal to the responsible organisation.

Although, the directive requires the employer to develop a safety and health document (see Article 3); it does not outline an explicit requirement to submit the document to the authorities (i.e. an administrative element) for review. Question 15 inquires if there are requirements to submit the document to the authorities across the various EC member states / EEA countries. As with the previous question, the picture is mixed and almost equally split. Twelve countries indicate that there is no need to submit the safety and health document to the authorities. Almost, the same number of countries (11) indicates the opposite (i.e. there is a requirement to submit the safety and health document). Two countries (Norway and Czech Republic) approach this in an altogether different manner. The national legislation in these countries requires that a document indicating that all relevant safety and health documentation has been developed is submitted to the relevant authority. Some countries (e.g. Norway and Cyprus) have also indicated that any pertinent safety and health documentation can be requested at any time (e.g. during an inspection).

Question 17 further develops the safety and health document submission theme explored in Question 15 above, but focuses specifically on approval / acceptance of the safety and health document (or equivalent) prior to the commencement of operation. A significant proportion (7 out of 11) of the countries that require the submission of the safety and health document also require some sort of formal approval / acceptance of the said document prior to the start of operations. Such requirements do not apply in the other four countries.

It is often desirable to review the specific details of how a particular hazard has (or is) being managed over and beyond the information set out in the safety and health document. This can be for a variety of reasons such as the significance of the hazard or a need to follow up on a “live” operation (e.g. drilling or installation) as it is executed. Question 18 explores this theme and shows that:

- The details of the design of the well and / or production facility is reviewed / verified by the authorities in 10 countries.
- Other aspects beyond those identified above are reviewed 6 other countries. For example, in the UK, the regulator receives a range of notifications (e.g. offshore installation design, entry into UK waters, relocation of an installation, combined operations and well) which are assessed and when appropriate action taken (e.g. inspection). The UK view in this regard is that the best way (and possibly the only way) to ensure such information is made available is by explicitly legislating for it. In Ireland, there is a requirement for the operator of offshore installations to submit emergency procedures to the HSA. In Norway, consent from the regulator is required at some key milestones / stages.
In 9 countries, no additional checks are conducted.

- Continuing on the health and safety document theme, Question 19 considers whether the national legislation includes provisions to keep it up to date (a requirement of the directive). Question 20 develops this further by examining what factors can trigger an update to the document. The responses indicate:
  - The national legislation in 24 of the 25 countries requires that the safety and health document is kept up to date. Luxembourg is reported as not having such a requirement. This aspect will should be explored further as it can indicate incomplete transposition of the directive.
  - “Major changes, extensions or conversion” was identified to be a key trigger that will prompt a review of the safety and health document (the case in 24 countries). This is followed by a need to keep abreast of technological developments and a legal requirement to update the document periodically (the situation in 6 and 2 countries respectively). Note that these requirements are not mutually exclusive and multiple triggers can apply in the same country.
  - Other triggers were also identified. For example in the UK, the Safety Case (equivalent of the safety and health document) is intended to be a living document that reflects reality of the current operating status of the installation. Therefore it needs to be revised as necessary to ensure it reflects reality. There is also a statutory requirement to review the safety case every five years. Additionally, the regulator in the UK can require a thorough review of the safety case at any point in time. In Lithuania, the following factors will result in an update in the risk assessment document has to be updated:
    - Following entry into force of the new legislation on occupational safety and health, particularly if there is set stricter requirements;
    - In light of changing technological process or the introduction of new chemicals or other hazardous substances and preparations or installation of collective protection measures;
    - Following a serious or fatal accident at work;
    - When state labour inspector oblige employers to carry out risk assessments;
    - Following an inspection where safety violations have been noted;
    - The company independently decides to update risk assessment.

In Austria, an update to the safety and health document is required following accidents, the identification of occupational diseases, or other evidence that health and safety of workers could be at risk. It can also be requested on demand of the authorities (i.e. by an inspector).

- Developing an understanding of how specific provisions / terms in the Directive have been interpreted also formed a key element of this work. Question 21 looks at whether the national legislation across the various EC member states / EEA countries have set out what constitutes a “major change” and the associated definitions given. Question 22 builds on this theme and explores the extent to which specific factors (namely equipment / physical changes, procedural
changes, and organisational changes) are considered to represent drivers of a major change. Question 23 goes further still and explores how major changes are managed on a practical level between the authorities and the regulated party. The responses (N=25) show:

- The national legislation in 9 countries set out an explanation of what constitutes a major change. Some of the descriptions given are listed below.
  - **In Denmark**, a “major change, extension or conversion” is understood to be any change that has the potential to impact on major accident risk, or changes assumptions made in previous risk analyses, typically changes to safety critical elements.
  - **In France**, a major change is defined as one that results in a change in working conditions (for example how the work is organised or a change in the rhythm of the work). The safety and health document has to be updated to reflect this change.
  - **In Latvia**, no clear definition of what constitutes a “major change” is given, however the national legislation requires that the document shall be reviewed if the work organisation, technology and work equipment is changed, the workplace has been enlarged or modified, or an accident at work has occurred after which the work equipment has been changed and measures have been taken to avoid the repetition of such cases.
  - The national legislation in **Poland** defines “changes” (including major changes) as any modification that results in a change in working conditions. This is a very broad definition and as such can include both technical and organisational changes in so far as they result in a change in the prevailing working conditions.
  - **In the UK**, the phrase “material change” is used to reflect the concept of “major change, extension or conversion” as set out in the directive. A material change is likely to be one that changes the basis on which the original safety case was accepted. This would involve changes to the basis on which risk control decisions are made or which necessitate a review of the adequacy of major hazard control measures. It includes both physical modifications and operational management changes of sufficient significance.
  - **Major changes in the Czech Republic** are understood to mean changes that result in an extension / modification of the exploitation area.

- In all 9 countries “equipment / physical changes” and “Procedural changes” are understood to represent major changes. With the exception of one country (Latvia), “Organisational changes” are also considered in the same way.

- In terms of how major changes are managed on a practical level (responses limited to the 9 countries), the following has been observed:
  - In two countries notification (to the regulator) and ratification (also by the regulator) is required prior to undertaking a major change.
  - In six countries, no notification or ratification is required.
In Denmark, notification and resubmission of the safety and health document is required. A similar situation exists in Norway but where a major change might result in a new consent application (as there are no submission requirements for the safety and health document). (See Question 17 above)

- **Question 24** explores the extent to which additional guidance (to aid compliance with legislative provisions is available) within the various EC member states / EEA countries. The feedback shows a varied situation with some locations indicating a wealth of additional information developed by all primary stakeholders (i.e. the authorities, industry and the workforce representatives), others indicating limited availability and others still suggesting a complete lack of any guidance documents. The more mature countries in terms of oil and gas production (e.g. Denmark, UK and Norway) are generally those that have the most information available from all primary stakeholders.

- The availability of anonymous reporting systems (by which incidents can be reported) within the various countries is the focus of **Question 25**. The responses show that such systems are more widely used than not (18 of the 25 countries have such systems within their regulatory apparatus).

- **Question 26** examines on what basis (if any), and at what frequency, are discussions held between the all primary stakeholders (i.e. regulators, industry and unions) at the national level. In some countries (e.g. Spain and Slovakia) such discussions are required by law and take place several times a year. In others (e.g. Norway, UK, Portugal, Hungary, etc.) such meetings are held several times but are not legislatively driven. In others still (e.g. Austria, Cyprus, etc.), meetings are arranged on an as needed basis and take place with varying amounts of frequency – more frequent in some countries than others. In two EC member states (Iceland and Luxembourg), no meetings are identified as taking place.

**VIII.3.3 Scope**

The questions in this section focus exclusively on the scope of the national legislation that implements the requirements of Directive 92/91/EEC across the various EC countries / EEA member states. They look to understand the activities governed by the national legislation; the type of hazards covered: in what circumstances and in what phases in the life cycle of the mineral extraction through drilling process. Particular attention is given to the floating offshore installations to better understand the point where there is a transition between the national legislation that implements the requirements of Directive 92/91/EEC and maritime legislation. Aspects explored in this section include:

- The degree of coverage afforded by the national legislation from a geographical perspective is also looked at (both on / offshore).
- The extent to which ancillary activities that enable offshore activity to take place (e.g. transportation, diving, supply vessels, etc.) are governed / covered by national legislation.
- The population groups the national legislation seeks to protect.
- The party or parties to whom the national legislation is aimed at (i.e. who is legally responsible).
- Whether coordination responsibilities are legislated for under the national legislation. Note that Directive 92/91/EEC imposes coordination responsibilities between the various players.
involved (contractors, sub-contractors, etc.) on the “employer” who is in charge of the workplace (see Article 3.3).

The following bullet points outline the key trends emerging from the results so far.

- The purpose of Questions 28 (and 29) is to develop an understanding of what hazard types (if not all) to the target population group (the workers) are covered by the national legislation that implements the requirements of Directive 92/91/EEC. The feedback provided from all countries, (with the exception of Romania) is that the national legislation is intended to cover all hazards. In Romania\(^5\), only occupational safety hazards (i.e. slips, falls from height, etc.; incidents that typically harm people on an individual basis) are understood to be covered by the national legislation that implements the requirements of Directive 92/91/EEC.

- In terms of the circumstances (i.e. normal operations, combined operations, emergency situations, etc.) under which the hazards should be assessed, the overwhelming feedback (in all 25 countries) is that the national legislation requires all hazards in all circumstances to be assessed (Question 30).

- Question 32 looks to understand the phases in the life cycle of the mineral extraction through drilling process that is covered by the national legislation. The responses show that exploratory / production drilling is clearly covered by in all countries. Other phases such as seismic operations (surveys, modelling, etc.) and decommissioning / abandonment are covered by the national legislation in some countries, but not in others (e.g. UK, Norway). More specifically, the national legislation in Norway goes much further and covers the earliest phases of the development plan. In the UK, the entire lifecycle (from design, construction, operation, modification, maintenance and decommissioning) is understood to be covered by the national legislation.

- The coverage afforded (to workers) by the national legislation over the stages in offshore exploration drilling activity (from transit to completion) is the focus of Question 33. The feedback, illustrated as a bar chart in Figure 23 shows that the core (i.e. actual) drilling activities are generally covered across all countries involved in offshore drilling. However, the situation with respect to start-up / shut-down is varied – covered in some and not in others.

- Question 34 develops the theme explored in Question 32, but focuses in particular on the situation that applies to a production facility / site. As observed in question 33, the core activity of drilling is clearly covered by the national legislation in all countries that provided feedback (25 out of 25). The situation with respect to start-up / shut-down is mixed – covered in some and not in others.

- The geographical extent surrounding a drilling / production facility / site that is covered by the national legislation is the theme explored in Question 35. The feedback provided indicates:

  o For onshore facilities, the area within the site boundary is covered. Activities relating to transport (pipelines), storage, processing of the extracted minerals are covered in some but not all countries.

  o For offshore installations, the geographical area covered is generally taken as the installation itself and / or a defined zone around it. Coverage of installations outside this zone such as sub-sea equipment, pipelines, onshore storage and processing activity etc.

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\(^5\) This view is currently being clarified as it conflicts with the responses provided at the interview session.
by the national legislation across the various countries is variable: some do and others don’t.

- **Question 36** explores the extent to activities related to “travel”, “support vessels” and “diving” are covered by the national legislation across the various countries in the particular context of offshore mineral extraction. The results show:
  
  o In terms of **travel**, time spent on an offshore facility appears to be clearly covered by the national legislation, but time spent travelling to and from a facility is covered in some countries and not in others.
  
  o With **support vessels**, the picture is mixed across all stages. Travel to/from the installation is covered by the national legislation in three countries (e.g. Latvia and Lithuania) but not in others. Manoeuvring / locating a support vessel next to an offshore installation is covered by six countries. More countries (ten) cover activities associated with a support vessel that are directly related to the installation (e.g. a lifting operation). The trend that results is that the more directly related to the installation the supply vessel activity is, the more likely it is to be covered by the national legislation.
  
  o Finally, the situation with regard to **diving** activity related to offshore installations is also varied; the national legislation in some countries covers it and others do not.

- **The population groups covered by the national legislation are the focus of Question 37.**
  
  o All 24 countries who provided responses indicate that all direct employees of the operating company working on an offshore / onshore facility are covered.
  
  o With the exception of Sweden, the same applies to contractors / sub-contractors.
  
  o With the exception of Austria and Romania, the same applies to Regulators / Inspectors when visiting such installations (e.g. to conduct an inspection).
  
  o The national legislation in a limited number of countries (~ 7) covers all other visitors, emergency responders and the general public.

- **The provisions in the directive are targeted at the “employer” indicating that this person/entity is responsible for safeguarding the health and safety of the exposed persons. However, given the often complex network of players in the mineral extraction industry, the person / entity designated as the employer is often the subject of much debate. Question 38 examines this issue and seeks to establish the parties that have ultimate legal responsibility for ensuring the health and safety of personnel on a facility (either offshore or onshore).**
  
  o In the bulk of countries (ten), full legal responsibility rests with the organisation tasked with conducting the day to day operations (i.e. the operator).
  
  o In a lesser number (seven), the licensee / concession holder is the responsible party (even in cases where they have a joint role as operator).
  
  o In four countries, a hierarchical responsibility model applies in which each party is responsible for his / her own activity.
  
  o A shared responsibility model between the licensee / concession holder and operator applies in four countries.
The situation in Sweden is reported as not known. In Iceland and Austria, the employer is understood to be the entity with ultimate legal responsibility in two countries. In Portugal, the licensee/concession holder has full responsibility for all activity that take place inside the facility.

- **Question 39** explores the availability of legal obligations on the employer to demonstrate how cooperation between the various players will be achieved. The feedback indicates that this is a requirement in the bulk of the countries (17 out of 25). The situation is not clear in one country (Portugal); and in 7 countries, there are no such requirements. As this is a key aspect of the directive (see Article 3), the absence of such requirements’ suggests incomplete transposition.

### VIII.3.4 Requirements, Practices and Enforcement

This section includes three questions (Questions 40 to 42) that focus primarily on practical enforcement activity (e.g. how inspections are organised, how frequently they occur, etc.). The feedback indicates:

- Inspections tend to be both announced and unannounced (Question 40).
- The frequency of inspection activity are situational specific and tend reflect the conditions within the country. (Question 41)
- **Question 42** examines whether or not the authorities receive information on drilling as they occur. The feedback is a split equally either way. Of 23 countries that responded, 11 do and 11 do not.

### VIII.3.5 Administrative Burden

This section is made up of only one question (Question 43) which explores the perception of the effort required to ensure compliance with the national legislation. The general feedback is that the burden is “appropriate and acceptable”. In the bulk of countries, it is perceived as not requiring any additional effort to that expended by a typical operator complying with their own safety and health management system. In other countries, it is perceived as requiring some additional effort; nevertheless the burden is still described as “appropriate and acceptable”.

### VIII.3.6 Future Regulatory Approach

As the section header indicates, the questions in this section (Questions 44-46) explore the opinions relating to possible changes to the directive in the future.

**Question 44** examines whether modifications to the directive are required. Of the 24 countries that responded:

- 8 countries indicate that changes to its scope, structure, content are required. These countries are those that are currently involved in offshore oil and gas extraction activity (exploration and production)
- The other 15 countries hold a contrarian view and do not see a need for any modifications. The countries in this group are to a large extent those that have no involvement in offshore oil and gas.
**Question 45** explores whether or not the European Commission (and specifically Directorate General Employment, Social Affairs and Inclusion) should be doing other activities to support EU Member States / EEA countries to implement national legislation and deliver safety and health for workers in the mineral extraction through drilling industry, for example writing guidance documents, enabling support to countries with small or new mineral extraction through drilling activities, etc. The responses are mixed. Of 25 countries that responded 13 think so, 8 do not and 4 are ambivalent.

Extending the scope of the directive to address environmental risks, liability, etc. (similar to the scope of the proposed offshore legislation) is the focus of **Question 46**. Of 25 countries that were polled; 7 declined to respond, 16 responded in the negative and the other 2 in the affirmative.

**VIII.4 Graphical Presentation of Survey Results**
The figures that follow illustrate the results of the survey questionnaire for the questions considered in the previous section.
Figure 1: Number of EU member states/EEA countries involved in the listed mineral extraction through drilling activity (N=25)
Figure 2: Response to Question 8: Is the structure of safety and health legislation in your country fundamentally the same as that used by the EC for their safety and health directives? (N=24)
a. Directive 92/91/EEC has been directly transposed as a stand-alone piece of legislation with no or few edits, with pre-existing safety and health legislation for the mineral extraction through drilling industry being repealed.

b. Directive 92/91/EEC has been directly transposed with no or few edits to lie alongside pre-existing safety and health legislation for the mineral extraction through drilling industry.

c. The requirements of Directive 92/91/EEC are embedded in several different pieces of legislation which are applicable to the mineral extraction through drilling industry.

d. The requirements of Directive 92/91/EEC have not been implemented in our country’s national legislation.

e. Do not know.

f. None of the above reflect how Directive 92/91/EEC has been transposed into legislation in our country.

Figure 3: Response to Question 9: How has Directive 92/91 EEC been implemented in the national legislation in your country? (N=25)
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling

Figure 4: Response to Question 10: *Is the national legislation governing safety and health for workers at work in the mineral extraction through drilling industry “prescriptive” or “goal oriented”?* - Which of the following sentences best reflects the implementation in your country? (N=25).

- a. Goal oriented, with no prescriptive requirements.
- b. Goal oriented, with very few prescriptive requirements.
- c. Goal oriented, with some prescriptive requirements.
- d. Both goal oriented and prescriptive (has many prescriptive requirements).
- e. Predominantly prescriptive with limited goal oriented aspects.
- f. Fully prescriptive (there are no goal oriented aspects to our legislation).
- g. Do not know.

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Figure 5: Response to Question 11: “Does the national legislation that implements the requirements of Directive 92/91/EEC in your country require a “risk assessment” to be undertaken to assess the “safety and health risks” to people arising from the aforementioned drilling related activity”? (N=24)
The analysis and evaluation of the effects of the practical application of national legislation related to safety and health at work in mineral extraction through drilling.
Figure 6: Response to Question 12: Additional risks assessed in addition to Health and Safety Risks? (N=23)
Figure 7: Response to Question 13: Quality Management system required? (N=25)
Figure 8: Response to Question 14: Requirements for independent checks of health and safety documentation (all or part thereof) (N=25)
Figure 9: Response to Question 15: Requirements to submit the Safety and Health Document (or equivalent)? (N=25)
Figure 10: Response to Question 17: *Is the “Safety and Health Document” (or equivalent) formally approved or accepted by the regulator prior to allowing operations to start?* (N=25)
Figure 11: Response to Question 18: Does the regulator review and approve other documentation (in addition to the “Safety and Health Document” or equivalent) as part of their safety and health regulatory oversight activities prior to allowing an activity (e.g. drilling production) to start? (N=25)
Figure 12: Response to Question 19: Does the national legislation that implements Directive 92/91/EEC in your country include a requirement to keep the “Safety and Health Document” up to date? (N=25)
Figure 13: Response to Question 20: What factors would trigger an update to the “Safety and Health Document” (or equivalent)? (N=24; multiple choice)
Figure 14: Response to Question 21: Definition of major change provided in legislation? (N=25)
Figure 15: Response to Question 22: What constitutes a major change? (N= 25; multiple choice)
Figure 16: Response to Question 23: Protocol involved for major changes? (N=25)
Figure 17: Response to Question 24: *Is guidance available?* (N=25; Multiple Choice)
Figure 18: Response to Question 25: Anonymous reporting system? (N=25)
Figure 19: Response to Question 26: Frequency/formality of discussions with all primary stakeholders? (N=25, multiple choice)
Figure 20: Response to Question 28: What types of hazards to people are covered by the national legislation that implements the requirements of Directive 92/91/EEC in your country? - Which of the following sentences best reflects the implementation in your country? (N=25, multiple choice)
Figure 21: Response to Question 30: *Under what circumstances are the hazards identified in Questions 28 and 29 required to be assessed?* (N=25)
Figure 22: Response to Question 32: Which of the following phases in the lifecycle of the mineral extraction through drilling process does the national legislation that implements the requirements of Directive 92/91/EEC apply to for the workers involved in the specified activities? (N=25)
Figure 23: Response to Question 33: The national legislation that implements the requirements of Directive 92/91/EEC is applicable for workers at work in the following steps in the life of an offshore exploration drilling activity? (N=23)
Figure 24: Response to Question 34: For a production facility / site what stages are covered by your national legislation that implements the requirements of Directive 92/91/EEC? (N=25)
Figure 25: Response to Question 35: For a drilling/production facility/site what is the geographical extent of the facilities covered by your national legislation that implements the requirements of Directive 92/91/EEC? (N=23)
Figure 26: Response to Question 36: For an offshore mineral extraction through drilling operation which of the associated activities are covered by your national legislation that implements the requirements of Directive 92/91/EEC? (N=23)
Figure 27: Response to Question 37: Which of the following groups of people at risk from the hazards are covered by your national legislation that implements the requirements of Directive 92/91/EEC? (N=24)
Figure 28: Response to Question 38: Legally responsible party? (N=25)
Figure 29: Response to Question 39: Under the national legislation that implements the directive in your country, are there any specific legal provisions that require the “employer” to demonstrate how such cooperation will be achieved? (N=25)
Figure 30: Response to Question 40: Does the regulator undertake announced and / or unannounced inspections of mineral extraction through drilling sites / installations? (N=25)
Figure 31: Response to Question 42: *Does the regulator receive and review information on all drilling activities as they happen? (N=23)*
Figure 32: Response to Question 44: *Is there a need for Directive 92/91/EEC to be modified? (N=24)*
Figure 33: Response to Question 45: Do you think the European Commission (and specifically Directorate General Employment, Social Affairs and Inclusion) should be doing other activities to support EU Member States to implement national legislation and deliver safety and health for workers in the mineral extraction through drilling industry, for example writing guidance documents, enabling support to countries with small or new mineral extraction through drilling activities, etc.? (N=25)
Figure 34: Response to Question 46: *Is there a need to extend the scope of the directive to address environmental risks, liability, etc. (similar to the scope of the proposed offshore legislation)?* (N=25; 7 non-responses)